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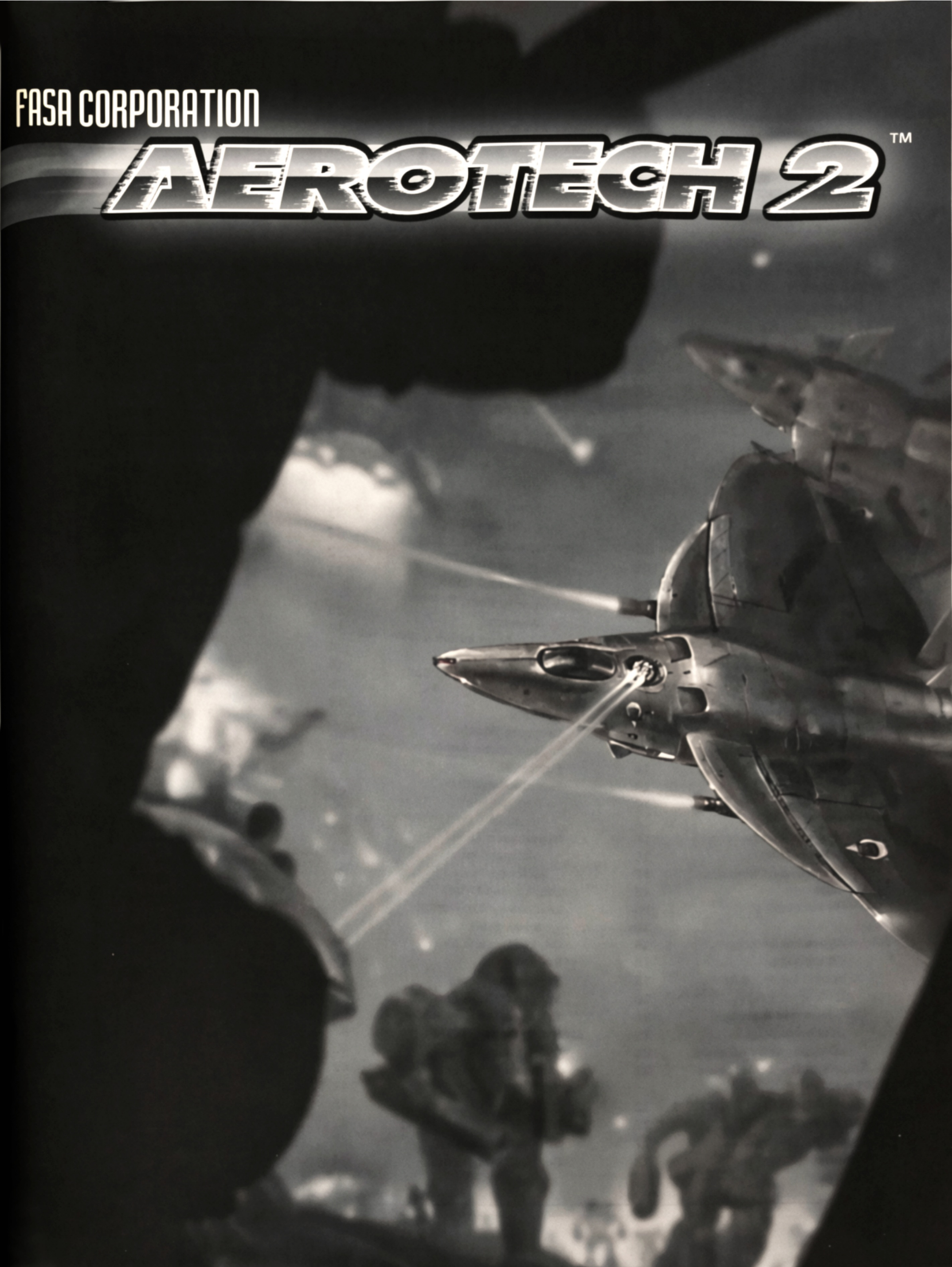
AEROTECH 2™

FASA CORPORATION

AEROTECH 2™



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And, as always, the gaming gang (Neil, Daren, Mike and Simon) for advice on rules and technical matters. Enjoy the land of sheep and penguins, D.

Author's Dedication:

To the new generation of of gamers:
Arthur Merriam and Alexander Moss.

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INTRODUCTION

Star Commander Lambert forced his Turk *into a tight turn, the aircraft practically standing on its left wing while he pulled up on the stick. White vapor streamed behind him, marking his path away from the battlefield. Tracer rounds lanced up from the Inner Sphere company, but none came close enough.*

Reaching a key point in his maneuver, he brought the aircraft level, then wrenched the stick to the right, rolling into a three-quarter turn that would take him back over the Spheroid troops. As his nose drew level with the enemy ground units, he reversed the roll, lining up for another strafing run. Focused on the objective, he nudged the stick slightly to the right, then the left, making sure his path would take him over the densest knot of troops.

He squeezed the trigger and ruby and emerald beams stabbed at the ground troops, scattering the survivors like ants. Again their return fire was largely ineffectual, with only a single laser scoring a hit on his left wing. Lambert pulled up and prepared to loop around for a third pass.

Suddenly the warning indicator screeched, alerting him to the enemy fire-control radar painting his craft. He yanked back on the stick, desperately seeking altitude in which to maneuver, then pushed the throttle forward to its maximum setting. He pulled though the vertical and began to loop over the top, rolling back upright as his nose came level with the horizon in a classic Immelmann turn. For a moment the Inner Sphere aircraft was visible before him, then it flashed past. A Slayer, *heavier and slower than his* Turk *but better armored. It was almost a fair fight. Lambert was going to enjoy this.*

AeroTech 2 brings the thrilling "third dimension" of air and space forces to the ground-based *BattleTech* game, offering players a new arena in which to test their command skills. Aerospace fighters fly over the battlefield, acting as valuable scouts and spotters and offering significant fire support in their lethal strafing, bombing and precision-strike attacks. BattleMechs couldn't get to the target planet without the interplanetary vessels known as DropShips. These huge vessels can be included in play, often as the focal point of a scenario. Interstellar craft, such as JumpShips and their armed and armored brethren, the massive WarShips, are also essential components of an assault.

AeroTech 2 (*AT2*) is designed first as a supplement for *BattleTech* and second as a stand-alone space combat game. The integration of aerospace units with ground fighting forces has been streamlined. The mechanics are simplified so the addition of aerospace forces does not significantly increase the complexity of play.

Because this is first of all a supplement to *BattleTech*, knowledge of the *BattleTech Master Rules (BMR)* is essential.

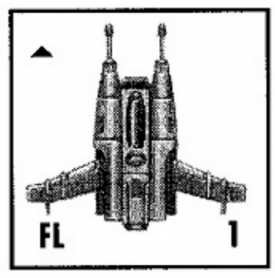
The rules for *AeroTech 2* are divided into the following sections. *Playing the Game* describes the basic mechanics of the game as they apply to space battles. *Movement* provides rules for integrating ground attack missions into *BattleTech*, together with simple air-to-air combat rules. *Heat* describes the effect of weapons fire on small and large vessels. *Combat, Ground Support Missions* and *Atmospheric Combat* provide more detailed rules for atmospheric movement and combat. *Optional Rules* increases the depth and flexibility of the game and includes advanced vector-movement rules and a system for squadron-level battles.

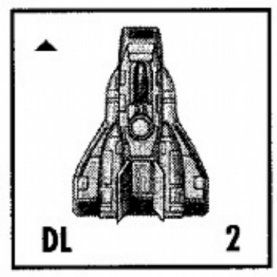
Construction provides rules for designing all classes of *AeroTech 2* units and rules for converting units from *AeroTech* and *BattleSpace*. *Roleplaying Rules* contains material for the *MechWarrior, Third Edition* roleplaying game, including expanded skill and trait descriptions, new life paths, and occupational fields unique to spaceborne characters. The final section, *Aerospace Technology*, describes space technology in the thirty-first century.

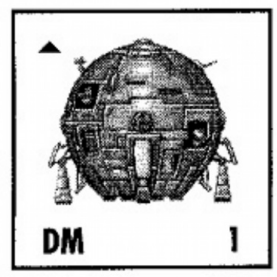
COMPONENTS

AeroTech 2 uses existing *BattleTech* components, including mapsheets and dice. This section describes the additional components required to play the game.

COUNTERS







The back cover of *AeroTech 2* contains perforated color counters that represent the position of units on the map and special counters for asteroids, debris, screen launchers, teleoperated missiles and so on. FASA gives permission for players to make copies of these counters for their personal use.

RECORD SHEETS

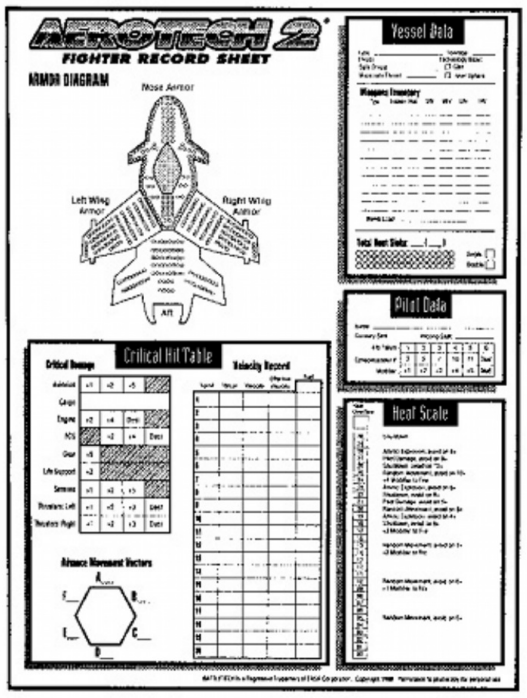
Each unit in *AeroTech 2* uses a record sheet to describe its game statistics and record any damage sustained. The sheets for fighters, DropShips, JumpShips, space stations and WarShips are all different, though they share several features.

The armor section allows players to track damage sustained by the armor plating on each facing. The number of armor sections varies by ship class.

The weapon data section details the weapons carried by each unit and their firing arcs, heat build-up, range and damage.

Unit data contains important statistics, such as Safe and Maximum thrust values and Structural Integrity. This section also provides space to record current velocity and fuel levels.

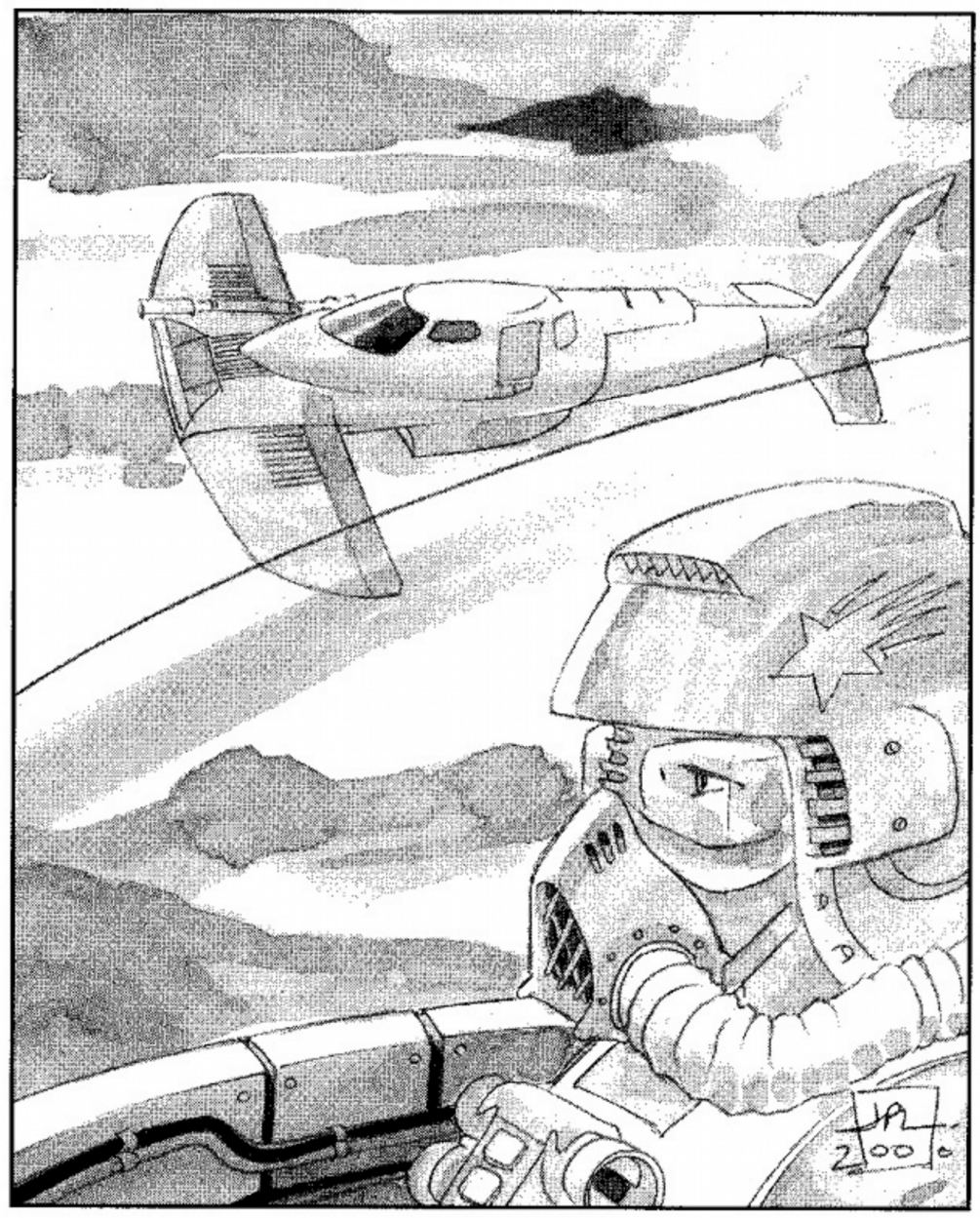
The critical systems section allows players to record the status of various vital components that are vulnerable to weapons fire. Most systems have a number of boxes, one of which is crossed off each time the system suffers a critical hit. In most cases, a system's abilities deteriorate as boxes are crossed off, as noted by the modifiers printed in each box. When all the boxes for a system are affected by critical damage



(the system has taken multiple hits), the system is destroyed.

MAPSHEETS

AeroTech 2 uses standard *BattleTech* mapsheets. The blank side (white hexes) represents space and high-atmospheric engagements, and the terrain side works for low-altitude operations. Within these rules, the term "mapsheet" is used to refer to a single 22 x 17-inch mapsheet (such as those included in *BattleTech, Fourth Edition*). The term "map" refers to the entire playing area for a scenario, consisting of one or more linked mapsheets.



DICE

Like *BattleTech*, *AeroTech 2* requires players to roll six-sided dice to determine the success of certain actions. The rules may require the players to roll one six-sided die (1D6) or two six-sided dice (2D6). When rolling multiple dice, add the results of both dice for a single total.

GAME TERMS

The following terms describe important concepts in *AeroTech 2*.

SKILLS

Pilots and vessel crews have statistics independent of their craft that are central to task resolution. The Gunnery and Piloting skills determine the success of weapons fire and maneuvers. In fighter craft, these statistics reflect the skill of the pilot and copilot, while in larger vessels they reflect overall crew quality.

Gunnery

The Gunnery Skill provides the base target number for all to-hit rolls. The base target number may be modified by range, weapon accuracy and environment. The default Gunnery Skill value is 4.

Piloting

The Piloting Skill provides the base target number for all Control Rolls, modified by difficulty and damage to the craft. The default Piloting Skill value is 5.

Margin of Success/Failure

Most actions in *AeroTech 2* have simple pass/fail results. The outcome of some actions, however, depends on the amount by which the roll succeeds or fails. To determine the Margin of Success/Failure, subtract the target number from the total of the dice roll. A positive result (a dice roll higher than the target number) is known as the Margin of Success (MoS) while a negative result (a dice roll lower than the target number) is known as the Margin of Failure (MoF). A result of 0 (the dice roll matching the target number) is called a Simple Success.

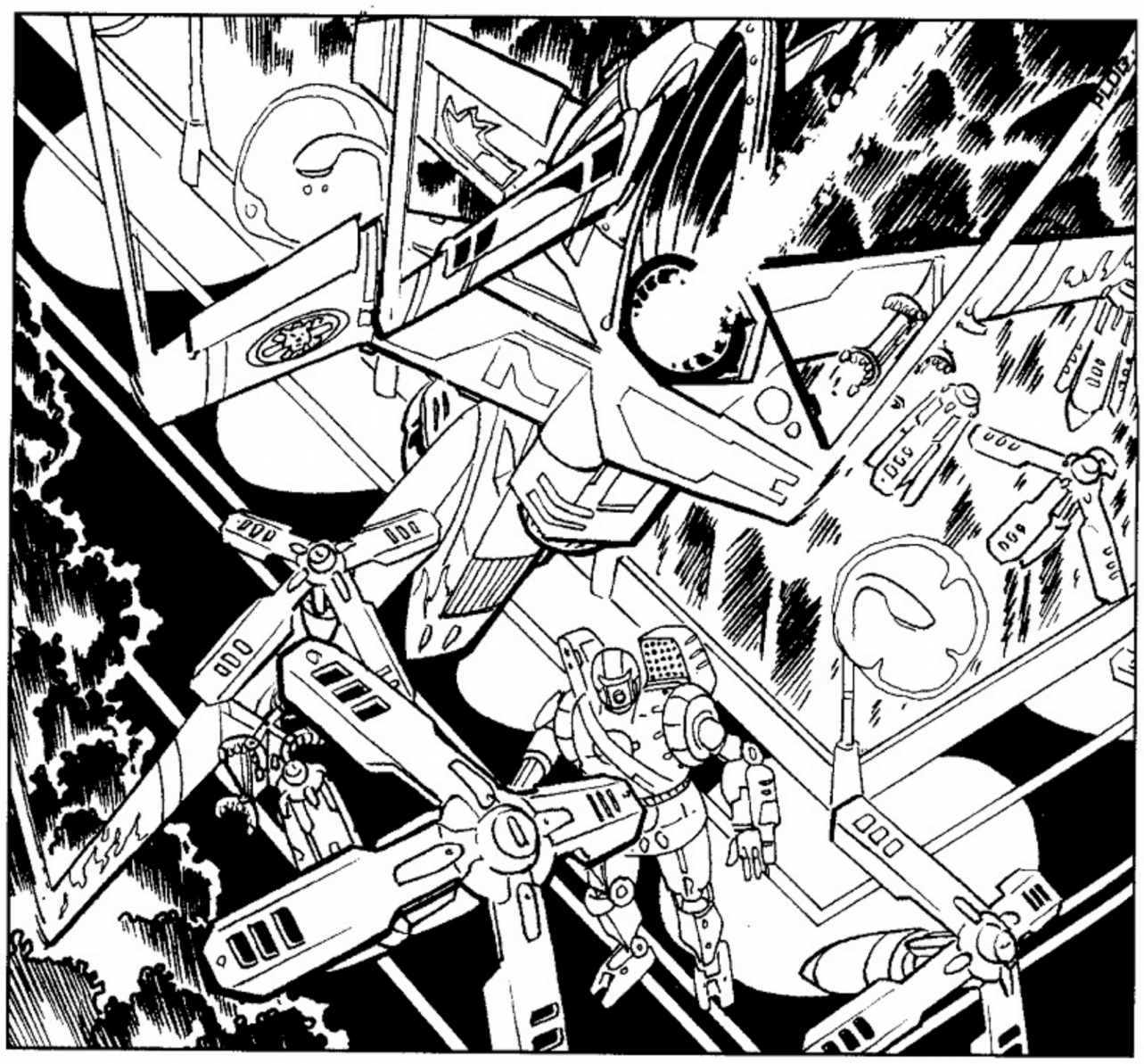
CREW/PILOT STATUS

As pilots and crews suffer damage, their effectiveness at their tasks deteriorates. Though the exact effects of this deterioration varies for fighters and larger vessels, the deterioration manifests in the same manner, which is noted on the crew status track.

When no boxes on the track are crossed off, the crew operates at peak efficiency. For each box crossed off, apply a +1 penalty to all Piloting or Gunnery Skill target numbers. When all six boxes are crossed off, the pilot/crew can no longer perform their job. Further, every time a fighter pilot suffers damage, he must roll 2D6 against a target number equal to 1 + (2 x number of boxes crossed off). A successful result on this roll indicates the pilot remains conscious; a failed roll indicates he falls unconscious.

PLAYING THE GAME

AeroTech 2 focuses on fighter actions, but it also provides rules for DropShips, JumpShips and WarShips. The basic mechanics of the game remain consistent for all types of vessels, with appropriate "special case" rules for each type.



SEQUENCE OF PLAY

The sequence of play provides a framework for the *AeroTech 2* game mechanics, regulating the players' actions. The sequence is the same as that outlined on pp. 13–14 of the *BattleTech Master Rules,* with a few minor modifications to represent the unique nature of aerospace fighters and naval vessels.

Players repeat the sequence of play until the battle is resolved. Each turn includes the following phases, performed in the order listed.

1. Initiative Phase
2. Movement Phase
3. Combat Phase
4. End Phase

There is no distinct heat phase in *AeroTech 2.* Instead, the effects of heat are resolved in the Combat Phase or the End Phase as appropriate (see *Heat,* p. 12).

INITIATIVE PHASE

One player for each side rolls 2D6 to determine Initiative for the craft under his control. The side with the highest dice total has the Initiative throughout the turn and moves last. The side with the second-highest total moves next to last, and so on.

The Optional Rules section (p. 32) offers an alternative Initiative system.

MOVEMENT PHASE

In this phase, each team moves the vessels under its control. The Movement Phase works the same as in the *BattleTech Master Rules,* except that the phase is subdivided into a series of distinct subphases, one for each vessel class. All vessels of a single class, regardless of the controlling player, move only in their subphase. Within each subphase the *Unequal Numbers of Units* rule applies (*BMR,* p. 14). The following list shows the movement subphases in order.

1. Space Stations
2. JumpShips
3. WarShips
4. Escape pods
5. Lifeboats
6. DropShips
7. Non-fighter small craft
8. Fighters

Paul controls 10 fighters and a single WarShip. John controls three DropShips and four fighters. John wins the Initiative and moves second in each subphase. There are no space stations or JumpShips on the map, and so play skips to the WarShip subphase. As the only player with a WarShip, Paul must move that vessel before play progresses to the next subphase. There are no escape pods or lifeboats in play, so the next subphase is for DropShips. John must move all three of his DropShips, since Paul has none. There are no small craft in play, so the next subphase is for fighters. Here the Unequal Numbers of Units rule comes into play, requiring Paul to move two fighters before John moves his first.

COMBAT PHASE

The team that wins the Initiative has an advantage in allocating fire. Use the Weapon Attack Phase mechanics (p. 13, *BMR*) for the Combat Phase. Players controlling large vessels must account for heat when allocating fire (see *Heat,* p. 12).

END PHASE

In the End Phase, players apply any damage and determine its effects. Destroyed units are removed from the map. Players should also note the current heat level of fighter craft and apply any effects. They may also attempt to regain control of out-of-control units, make Consciousness Rolls for fighter pilots, and take any other actions not covered by the Movement or Combat Phases.

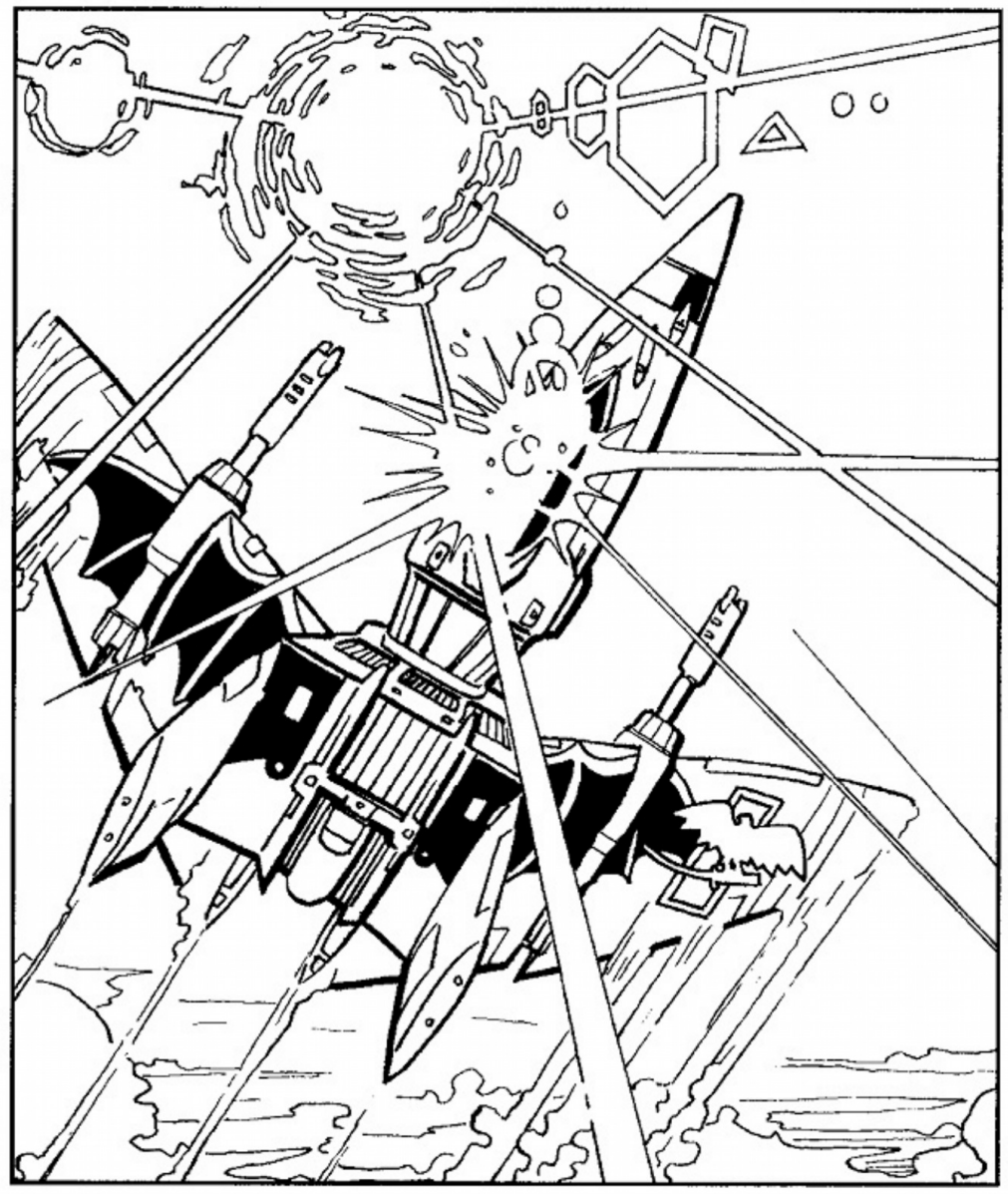
MOVEMENT

Movement in *AeroTech 2* requires more complexity than movement in *BattleTech.* Different movement systems apply depending on whether a unit is operating in space or in the atmosphere.

In the frictionless vacuum of space, a moving craft continues in a straight line at a constant speed unless affected by an outside force. This application of force can alter velocity or direction. This could be a natural force, such as gravity, or a generated force, such as the thrust from a craft's engines. For example, if a fighter accelerates in the same direction for two turns, spending 5 Movement Points in the first turn, and 6 in the second, it ends the second turn with a Velocity of 11. It will continue at a Velocity of 11 unless it spends thrust to accelerate or brake.

In atmosphere a similar principle applies, with momentum carried forward from one turn to the next. However, due to atmospheric friction, a unit's velocity will steadily decrease unless thrust is applied from its engines.

The following rules apply to movement in space and provide the basis for all movement in *AeroTech 2.* Additional rules for atmospheric operations can be found in *Atmospheric Combat*, p. 28. These movement rules are fast and simple, favoring playability over a staunch adherence to real-world physics. Players preferring a system that more closely mimics reality should review the advanced vector-based movement system in the *Optional Rules* (p. 32).



FACING

AeroTech 2 uses a hex map to regulate movement, and every unit must face one of the six sides of the hex in which it is placed. A unit's facing—the direction in which it's nose points—determines where it can fire and where attacks against the unit will strike. In the basic *AeroTech 2* rules, a unit's facing and heading (direction of movement) are the same. The *Advanced Movement* rules (see p. 32) provide an alternate movement system allowing heading and facing to differ.

STACKING

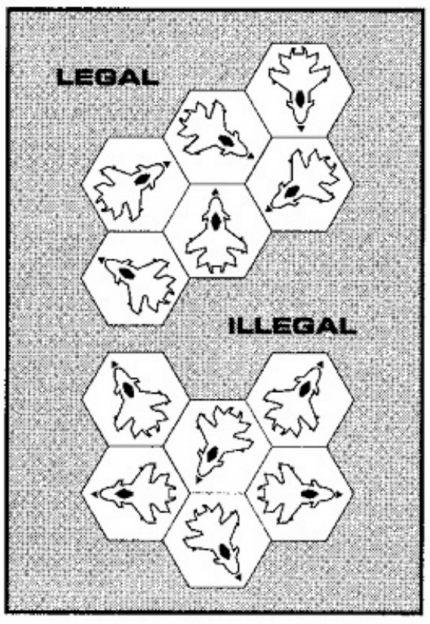
Any number of units can stack in the same hex, regardless of the player to which they belong. Vessels in the same hex can collide if one or more of them is out-of-control (see *Control Rolls*, p. 8).

THRUST POINTS

Each unit capable of movement has two Thrust Values. Safe Thrust is the number of Thrust Points a vessel can spend in a single turn without suffering adverse effects. Maximum Thrust is the total number of Thrust Points a unit can spend in one turn and is equal to 1.5 times the Safe Thrust value. Spending a number of Thrust Points greater than the Safe Thrust value degrades the unit's handling, making it harder to control and increasing the difficulty of targeting enemy units.

USING THRUST POINTS

In space, each unit will travel at a constant speed and heading unless thrust from the engines is used or the unit is affected by the pull of a planet's gravity (see p. 11). At either the beginning or end of a unit's movement, it can spend Thrust Points to change velocity. Thrust Points can be spent during movement to change the direction of travel.



Changing Velocity

Each Thrust Point spent will increase or decrease the unit's velocity by 1. Units in *AeroTech 2* have no maximum velocity, though the size of the playing area creates practical limits. A unit's velocity can be reduced to zero, but not *below* zero. In the standard movement system, craft cannot move backward.

Velocity changes made before movement affect the current turn's movement. Velocity changes made at the end of the movement take effect the following turn. A unit that changes velocity at the end of one turn cannot change velocity again at the start of the next turn.

Changing Heading

Thrust Points are used to change a unit's facing during movement by 60 degrees (one hex-side). The Thrust Point cost to turn depends on the current velocity, as shown in the Turning Cost Table. Critical damage to the unit can increase this cost. Note that each point of velocity above 10 increases the cost of a turn by one Thrust Point. For example, a one-hexside turn at Velocity 15 costs 10 Thrust Points.

If a unit does not have enough thrust to turn at its current velocity, it cannot turn.

Fighter units and units with a Velocity of 0 can turn as many hexsides within a single hex as the available thrust allows. DropShips and small craft can turn a maximum of two hexsides before moving forward at least one hex. WarShips can turn a maximum of one hexside, then they must move at least one hex forward before turning again.

TURNING COST TABLE

Current Velocity	Thrust Point Cost
0–2	1
3–5	2
6–7	3
8–9	4
10	5
11	6
12+	+1 per point

CONTROL ROLL TABLE

Base Target Number: Piloting Skill

Modifiers

Pilot/crew damage	+1 per crossed box
Avionics damage	+1 per crossed box
Life support damage	+1 per crossed box
Atmospheric operations	+2
Above Safe Thrust	+1

Roll

Any unit can spend one Thrust Point to "roll," a move that effectively reverses the craft's right and left sides. A craft may make this maneuver at the beginning or the end of the Movement Phase. One roll can be safely made each turn. A second roll in the same turn forces the player to make a Control Roll (see p. 8).

The roll is roughly equivalent to the *BattleTech* torso twist in that it increases the unit's flexibility, particularly when damaged. In combat, this means weapons mounted in a left-side arc fire into their right-side equivalents, and vice versa. Hits to locations on the left-side armor are applied to the right-side armor facings. Similarly, any critical damage that limits turns in one direction limits turns in the opposite direction when a unit is rolled.

For example, a fighter with one box of thruster damage on the left side would normally pay only one point to turn right. If the unit is rolled, it must pay an extra Thrust Point to turn right. Turns to the left would be at normal cost.

Moving

Each craft must move a number of hexes equal to its velocity. Unless it has a Velocity of 0, the first movement of any unit, before it makes any facing changes, must be to move forward one hex.

HIGH-G MANEUVERS

Vessels and their crews can sustain only a certain level of G-forces before suffering adverse effects. If a single expenditure of Thurst Points to turn or change velocity exceeds a vessel's current Structural Integrity (SI), the maneuver might damage the vessel. If the Thrust Points spent on a single maneuver exceed twice the number of pilot/crew boxes that are not crossed off, the maneuver might damage the pilot/crew. If the thrust spent exceeds both values, then the player must roll to determine if both the craft and the pilot/crew were damaged.

If the amount of thrust spent exceeds the SI, the controlling player must make a Control Roll (see p. 8), adding the Thrust Points spent in excess of the vessel's SI to the target number. If the roll succeeds, the maneuver is completed normally. If the roll fails, the maneuver is completed but the vessel suffers 1 point of SI damage.

For example, a fighter with an SI of 6 attempts a maneuver that uses 8 Thrust Points. Because this is 2 points higher than the fighter's SI, the pilot must make a Control Roll at a +2 modifier (Target Number 8) or suffer one point of damage to the fighter's SI.

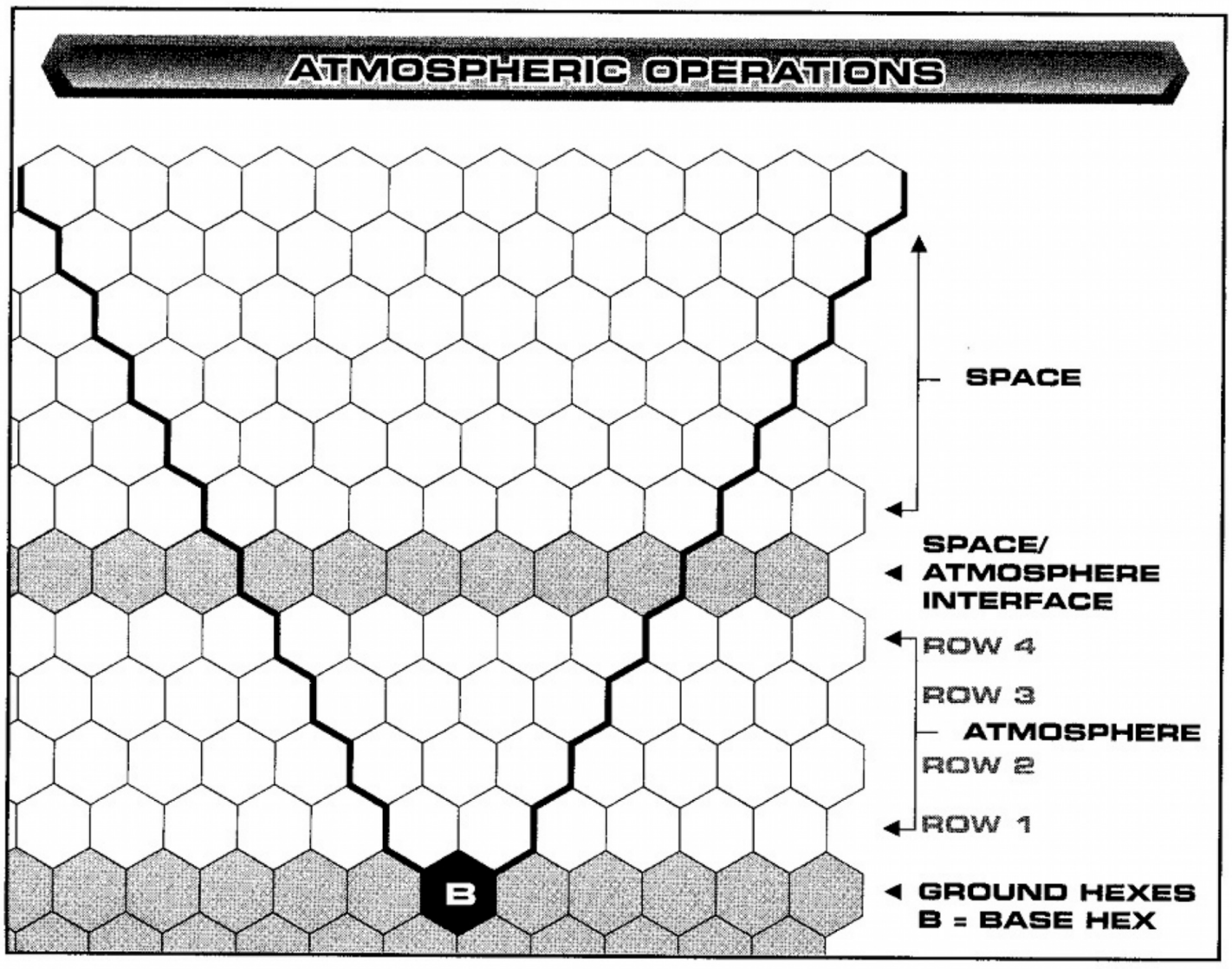
If the amount of thrust exceeds the SI by twice the number of pilot/crew boxes not crossed off, the controlling player must roll 2D6 against a target number equal to 2 + (2 x number of pilot/crew boxes crossed off), adding the excess Thrust Points to the target number. Success indicates the pilot/crew is unharmed. Failure inflicts 1 box of pilot/crew damage, and a fighter pilot must make a Consciousness Roll (see *Crew/Pilot Status*, p. 5).

An uninjured pilot in a fighter with a SI of 7 executes a maneuver that uses 14 Thrust Points. This exceeds the fighter's SI, so he must make a Control Roll with a +7 modifier. Because this is also more than double the number of boxes not crossed off (2 x 6 =12), the player must roll 2D6 to determine whether the pilot suffers damage. The Base Target Number is 2, modified by +2, the difference between the Thrust Points the pilot can sustain (12) and that spent (14). He rolls 2D6 against Target Number 4, and unfortunately gets a 3. He suffers a point of damage and must make a Consciousness Roll against Target Number 3.

CONTROL ROLLS

Some situations or types of damage can cause a craft to crash or make it difficult for the pilot and crew to control their vessel. *AeroTech 2* uses Control Rolls (similar to Piloting Skill Rolls in *BattleTech*) to represent a pilot's attempts to handle a vessel's movement in difficult situations.

MOVEMENT



To make a Control Roll, roll 2D6 against a target number based on Piloting Skill, damage and environmental factors, per the Control Roll Table. If the result of the roll is equal to or greater than the target number, the unit remains in control. Otherwise, the unit is considered out-of-control. Control Rolls are made in the End Phase of the turn in which the conditions creating the potential loss of control occurred.

Shutdown units are automatically out-of-control.

OUT-OF-CONTROL EFFECTS

A unit that is out-of-control cannot spend any Thrust Points. It cannot change velocity or heading and must continue on its present heading and velocity.

Further, such units run the risk of colliding with other vessels. If an out-of-control unit enters the same hex as another craft, friendly or enemy, roll 2D6. On a result of 10 or more, the out-of-control unit collides with the "target." If there are multiple potential targets in the hex, randomly determine which one is hit. See *Collisions and Ramming*, p. 20 for details of the damage suffered by both units.

In addition, out-of-control units suffer a +2 modifier on to-hit target numbers and cannot attempt to land, launch or recover fighters, or dock with other vessels. If an out-of-control vessel attempts to reenter the atmosphere, it is destroyed. Out-of-control JumpShips and WarShips cannot attempt to deploy or recover jump sails, nor can they attempt to jump. If the sail is deployed when the unit goes out-of-control, the sail is destroyed. Docked DropShips can attempt to undock from an out-of-control station, JumpShip or WarShip, but must make a Control Roll or go out-of-control.

RANDOM MOVEMENT TABLE

1D6 Die Roll Result	Effect
1	Forward 1 hex, turn left 2 hexsides
2	Forward 1 hex, turn left 1 hexside
3–4	Forward 1 hex
5	Forward 1 hex, turn right 1 hexside
6	Forward 1 hex, turn right 2 hexsides

Random Movement

When a Control Roll fails by a margin of 5 or more points, or when indicated by critical hits or heat effects, a unit might suffer random movement in its next Movement Phase. For each point of velocity, rather than moving the unit forward, roll 1D6 and compare the result to the Random Movement Table, carrying out the indicated movement. Repeat this process until all points of velocity have been used.

The controlling player should note the number of Thrust Points that normally would be used to carry out each maneuver at the unit's current velocity (effective Thrust Points) and apply the appropriate effects for high-G maneuvers (p. 8). Random movement allows craft to execute maneuvers normally considered impossible for their class, such as a WarShip turning two hexsides in the same turn. In such cases, double the effective Thrust Point cost for calculating the effects for high-G maneuvers.

Simon makes a Control Roll for his Shilone *fighter and fails by a margin of 6, meaning the unit must suffer random movement. The fighter has a Velocity of 4, and so must make four rolls on the Random Movement Table. The first result is a 3; the fighter simply moves forward 1 hex. The second roll is a 4, and the unit moves forward another hex. The third result is a 6, which means the fighter moves forward 1 hex, then turns right 2 hexsides—normally a 4 Thrust Point maneuver. The final roll is a 5, so the unit moves forward 1 hex and turns another hexside right—a 2 Thrust Point maneuver. The* Shilone *has a SI of 6, and so neither of the maneuvers exceed the high-G maneuvers restrictions.*

ATMOSPHERIC OPERATIONS

It is almost inevitable that engagements fought in near-orbit will spill over into the upper atmosphere. When fighting an engagement near a planet, make the following changes to the map and rules. Nominate one edge of the map as the surface of the planet. Treat the four hexrows above the ground as the planet's atmosphere. The fifth row is the space/atmosphere interface. Gravity (see p. 11) will affect any craft on the same mapsheet as the planet's surface.

The Atmospheric Operations diagram on page 10 illustrates the planet to near-orbit setup. Use the base hex and corresponding firing arc with the *Surface-to-Orbit Fire* optional rule, p. 41.

RE-ENTRY TABLE

Situation	Modifier (maximum 6)
Craft has engine damage	+1 per box crossed out
Craft has damage to thrusters	+1 per box crossed out
Craft has no thrust*	+6

* A craft is considered to have no thrust if it cannot generate any thrust due to critical engine damage or a lack of fuel.

ALTITUDE TABLE

Hexrow	Altitude (km)	Max. Safe Velocity
Ground	0–17	2
Row 1	18–35	3
Row 2	36–53	6
Row 3	54–71	9
Row 4	72–89	12
Interface	90–107	15

SPACE/ATMOSPHERE INTERFACE

The space/atmosphere interface marks the divide between the effective vacuum of space and the increasingly dense planetary atmosphere. Because it acts as a barrier, the interface can damage or destroy a craft that enters an interface hex. When crossing from a space hex to an interface hex, a unit must make a Control Roll, applying the appropriate modifiers from the Re-entry Table (to a maximum of 6) in addition to any other applicable modifiers.

If the result is equal to or higher than the target number, the re-entry is successful and the craft enters its destination hex and continues its movement. If the result is less than the target number, the re-entry has failed. The unit's velocity drops to 0, and it remains in the hex from which it tried to enter the interface. In addition, for each point of the Margin of Failure, apply 5 points of damage to the nose of the craft (see *Damage,* p. 16).

Only craft that may currently spend 4 or more Thrust Points can move from an interface hex to a space hex. JumpShips and WarShips cannot enter the space/atmosphere interface. An out-of-control unit that enters the interface is immediately destroyed.

ATMOSPHERIC MOVEMENT

In the atmosphere, lift and drag alter flight dynamics considerably, giving aerodyne DropShips and fighters a distinct performance edge over spheroid DropShips.

For every unit operating in atmosphere, increasing velocity by 1 costs 2 Thrust Points. Every unit in atmosphere automatically decreases velocity by 1 in the End Phase of every turn. Use the standard rules to decrease velocity by more than 1 point in a turn.

Because spheroid DropShips must use their thrusters to provide lift, control and velocity, they are impractical for atmospheric combat. However, a DropShip can hover by pointing its nose directly away from a planet (facing either of the two hexsides that point away from the planetary surface map edge), and reducing its velocity to 0. The unit must spend 2 Thrust Points each turn to offset gravity. While the DropShip is hovering, this thrust will not increase the unit's velocity.

Aerodyne DropShips and fighter units can operate at higher speeds than spheroids by using wings and other lifting surfaces to fly and by using ailerons, flaps and rudders to maneuver. As atmospheric density, and thus friction, increases with proximity to the surface, a craft's maximum speed will decrease, as shown on the Altitude Table.

If a craft exceeds the safe velocity for the altitude level, it automatically suffers 5 points of damage to its nose armor for each point by which its speed exceeds the safe velocity.

If a fighter or aerodyne DropShip has a velocity of 0, it will be affected by gravity (see p. 11).

Units may enter a hex that represents the ground as if it were an atmospheric hex if they are attempting to land or moving to the low-altitude map (see *Atmospheric Combat*, p. 28).

Atmospheric interceptors (e.g., the 'MechBuster fighter) can only operate in ground hexes and the two hexrows above the surface.

Propeller-driven aircraft such as the *Boomerang* spotter plane may only operate in ground hexes and the first hexrow above the surface. These conventional craft can hover in the same way as spheroid DropShips, turning for half the standard cost.

GRAVITY

Gravity influences the position of any units on the same mapsheet as the planetary surface. In the End Phase, displace any units on the planetary mapsheet one hexrow closer to the planetary surface. If there are two possible hexes into which a unit can move, the player controlling the unit selects the hex in which the unit ends the turn. Craft displaced into the interface hex must make a Control Roll for re-entry.

Gravity will not influence units in the interface, atmosphere or a ground hex unless their velocity is 0. Units in a ground hex with a velocity of 0 must either hover, attempt to land (see *Landing and Liftoff*, p. 37) or crash. A unit that crashes is considered destroyed.

HEAT

Most of the weapons used in *AeroTech 2* generate massive amounts of heat. Vessels must disperse this heat efficiently to avoid damaging the crew or fragile onboard systems. A series of heat sinks mounted in every unit disperses some, but rarely all, of the heat generated by the weapons.

The size of the craft affects how heat dissipation is tracked: fighters and small craft closely track heat and its dissipation. Larger vessels, such as DropShips and WarShips, use a more abstract system to track heat from the immense weapons batteries they carry.

FIGHTERS AND SMALL CRAFT

Each weapon has a Heat Value that represents the amount of heat generated when it is fired. When the total heat generated is less than the number of heat sinks, the heat has no effect on the craft. If the unit generates more total heat than the number of heat sinks, then adverse effects might result.

HEAT BUILDUP

The mechanics for heat generation and dissipation are based on those outlined on pp. 46–48 of *BMR*. Fighters generate Heat Points only for weapons fire or critical engine damage as shown in the Heat Point Table, not for movement.

HEAT POINT TABLE

Activity	Heat Points
Weapons fire	Per Combat Tables, pp. 99-101
Heat sink	–1 per operational heat sink
	–2 per operational double heat sink
Engine damage	+2 per hit

During the Combat Phase, players must note the heat generated by each fighter and subtract the number of functional heat sinks. Record any remaining Heat Points on the Heat Scale. These Heat Points are cumulative with excessive Heat Points generated in subsequent turns. If the craft dissipates more heat than it generated, subtract the difference from the Heat Scale. The level of heat recorded on the Heat Scale cannot be reduced below 0, but it can be increased above 30, in which case the excess heat is recorded in the Heat Overflow box (see *Recording Heat Buildup*, p. 47, *BMR*).

EFFECTS OF HEAT

Excess heat can cause a number of problems, ranging from computer glitches and random movement to pilot damage and ammunition explosions. Before reading the following sections, review the Heat Scale Table on the record sheet at the end of this book.

Players can avoid some effects of excess heat by making a successful 2D6 roll against the target number shown next to an event on the heat scale. If the result is equal to or greater than the target number, the pilot successfully avoids that effect of excess heat. If the heat level reaches two or more trigger points in a single turn, roll only against the highest target number. For example, if a fighter is at 11 heat, it has passed two Random Movement events (5 heat and 10 heat). The player rolls only against a target number of 6+ (10 heat).

Random Movement Effects

At 5, 10, 15, 20 and 25 heat, the craft's navigation and piloting systems may malfunction. A malfunction means the craft cannot voluntarily spend Thrust Points in the following turn and the unit is treated as out-of-control and suffers random movement (p. 10). To bring the craft back under control, the player must make a Control Roll. The craft remains subject to the trigger event and must make a successful random movement Avoid Roll in each subsequent End Phase until the heat drops below the lowest trigger point for that event (5 heat).

Weapon Attack Effects

Targeting computers are sensitive to heat. As temperatures increase, weapon accuracy decreases. At 8, 13, 17 and 24 heat, modify the unit's to-hit numbers. If several modifiers apply, use only the highest. For example, a fighter at 20 heat is subject to three to-hit penalties (+1 at 8 heat, +2 at 13 heat and +3 at 17 heat). Only the highest (+3) applies.

Shutdown Effects

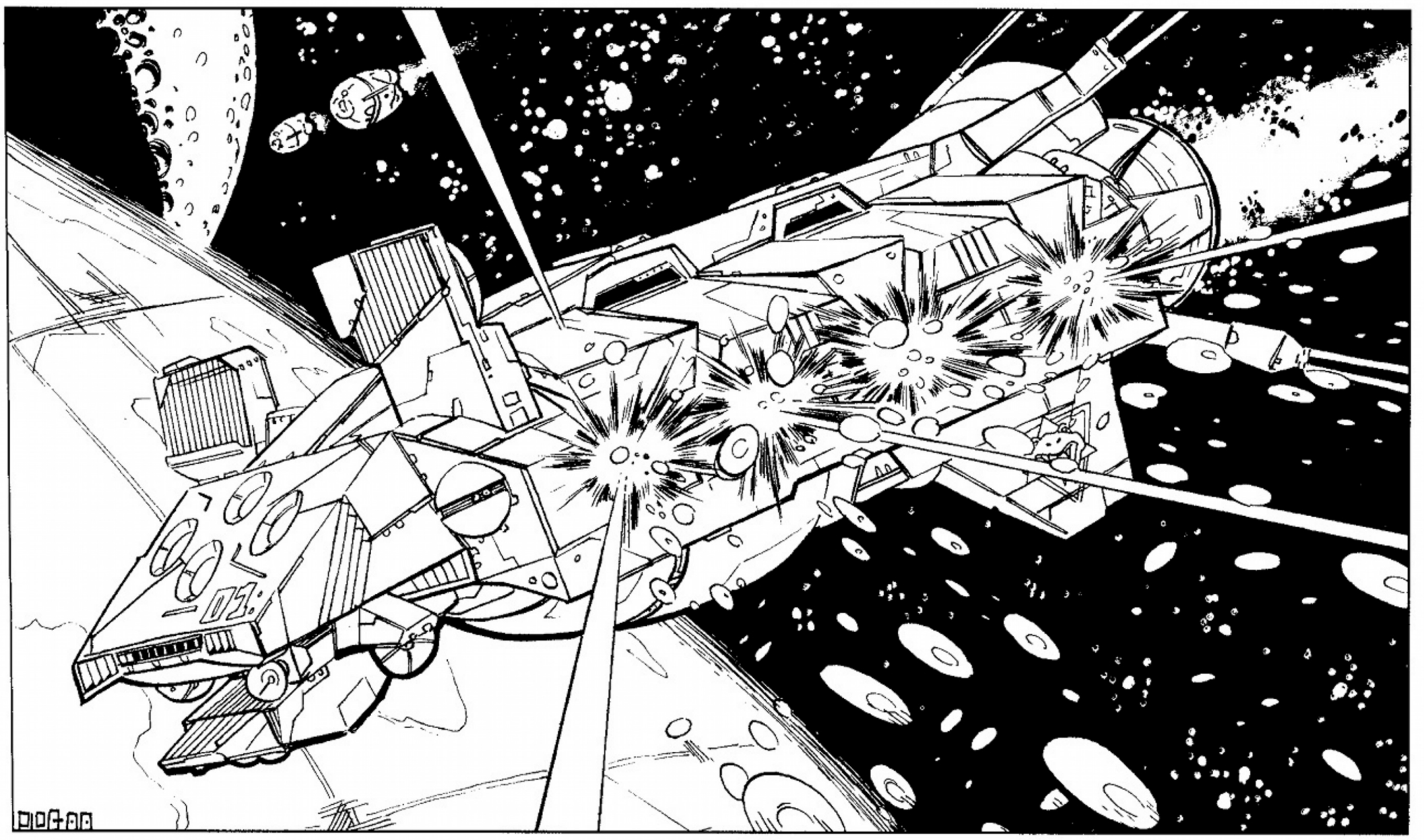
At 14, 18, 22, 25 and 30 heat, the excess heat can destabilize the vessel's fusion power plant, triggering the safety shutdown mechanism. The pilot can attempt to override the automatic shutdown by rolling 2D6 against the target number shown next to the shutdown event. If the roll succeeds, the unit remains operational. If it fails, the unit shuts down and cannot spend Thrust Points, fire weapons or drop bombs. The shutdown vessel's heat sinks remain online and dissipate heat normally.

If a unit shuts down in space, it will continue to drift at its current velocity and heading until the pilot can restart the power plant by making a successful shutdown Avoid roll in a subsequent turn. The engine automatically restarts when the heat drops to 13 or less. The unit is considered out-of-control for purposes of determining collisions, but it does not suffer any random movement effects.

In atmosphere, a shutdown unit will likewise continue in a straight line, but runs the risk of stalling and losing altitude (see *Atmospheric Operations*, p. 11). A shutdown unit that moves from a space hex to the space/atmosphere interface is automatically destroyed.

Ammunition Effects

High heat levels can cause ammunition to explode, inflicting immense damage to the unit. Avoid rolls are required at 19, 23 and 28 heat. If the Avoid roll fails, the ammunition with the



potential to cause the most damage will explode. Gauss rifle ammunition is not subject to ammunition explosions caused by heat. For example, a machine gun inflicts 2 points of damage, an SRM-2 inflicts 4 points, an AC/10 inflicts 10 and so on. A fighter with machine gun and AC/10 ammo would suffer an AC/10 ammo explosion.

If an explosion takes place, multiply the damage caused by a single shot by the number of rounds remaining and apply this damage to the unit's SI. If a fighter equipped with CASE suffers an ammo explosion, it suffers the damage from a single shot only. The rest of that weapon's ammo is destroyed, but inflicts no additional damage.

For example, a *Slayer* fighter has a full ton of AC/10 ammunition that explodes. This inflicts 100 points of damage—10 points per shot x 10 shots per ton—to the SI, which will destroy the unit. Had the fighter been equipped with CASE it would have sustained only 10 points of damage.

Ammunition explosions automatically injure the vessel's pilot/crew, inflicting 1 point of damage. Fighter pilots must make a Consciousness Roll (see *Crew/Pilot Status*, p. 5).

Pilot Damage Effects

High heat levels can also injure the pilot. Avoid rolls must be made at 21 and 27 heat. The effect of pilot/crew damage remains for the rest of the battle. When a heat damage Avoid roll fails, the pilot/crew sustains 1 box of damage and fighter pilots must make a Consciousness Roll (see *Crew/Pilot Status*, p. 5).

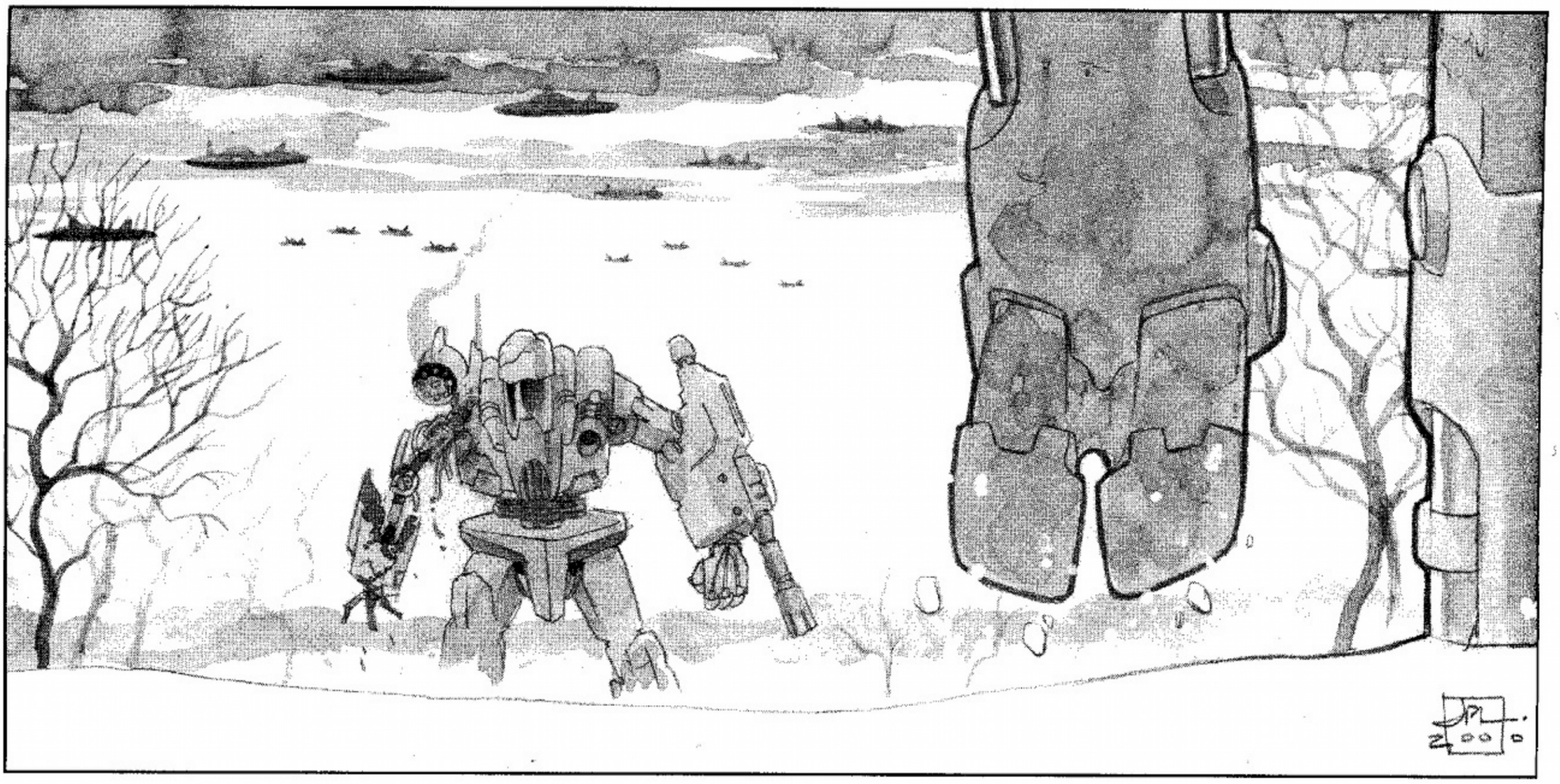
LARGE VESSELS

Large vessels—DropShips, JumpShips, WarShips, and space stations—work on a zero-net-heat principle that prevents them from generating heat in excess of their ability to dissipate it. This not only simplifies heat management for vessels that can have dozens of weapons and thousands of heat sinks, it also reflects the fact that "heat" for such vessels represents more than just excess temperature. It includes the resources required to power weapon and targeting systems and the superstructure to support crew to operate those systems.

Heat on large vessels is generated per firing arc, rather than per weapon or bay. The total heat for all weapons in each firing arc should be calculated and written on the record sheet for each large vessel. Firing all or some of the weapons in that arc is considered to generate the full heat of all weapons in the arc.

A Sovetskii Soyuz *heavy cruiser generates 40 Heat Points in its nose arc, 220 in each of the front-left and front-right arcs, 450 in each broadside arc, 460 in the aft-left and aft-right arcs, and 0 in the aft arc—a total of 2,300 points. It can dissipate 2,150 heat points. The ship cannot generate more than 2,150 points in a single turn, and so the controlling player cannot fire all the weapons at once. He could fire all but one of the following arcs in a given Combat Turn: right or left broadside, front-left, front-right, aft-left or aft-right.*

COMBAT



The goal of any battle is to neutralize the enemy. Though most *AeroTech 2* battles are likely to be ground-support missions, the foundation of the game is rooted in space combat, where aerospace units are most at home. This section covers the basic mechanics of combat as it applies to space engagements. Additional information on atmospheric operations and ground-attack missions can be found in Ground Support Missions (p. 22) and Atmospheric Combat (p. 28).

WEAPON RANGE TABLE

Range Bracket	Hexes (Standard)	Hexes (Capital)
Short	0–6	0–12
Medium	7–12	13–24
Long	13–20	25–40
Extreme	21–25	41–50

SCALE

AeroTech 2 encompasses a vast range of vessel sizes, from 20-ton fighters to million-ton WarShips. Using the same scale for such vessels is impractical, and thus weapons and armor are divided into two categories—standard and capital. When standard weapons attack standard armor, or capital weapons attack capital armor, the effects follow the standard rules: 1 point of weapon damage destroys 1 box of armor. When weapons and armor are of different categories, however, a number of additional effects come into play (see *Damage*, p. 18).

LARGE VESSEL WEAPON BAYS

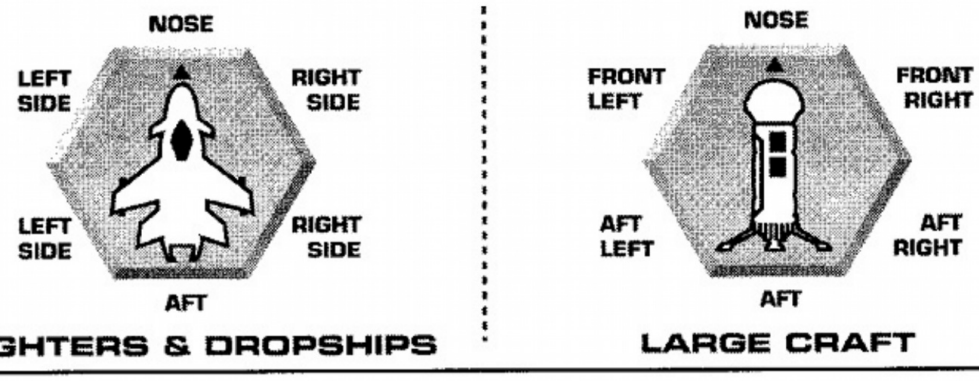
Many large vessels carry dozens of weapons, and making to-hit rolls for each individual laser, autocannon and PPC is impractical. Large vessels in *AeroTech 2* use a system that groups together similar weapons for which a single to-hit roll and hit location roll is made. This speeds up play with heavily armed vessels. Such groups of weapons are known as "bays," each containing a number of weapons of the same type (for example, different types of lasers would appear in the same bay).

Weapons are divided into bays during construction (see *Weapons, Ammunition and Other Equipment*, p. 46). In the game description of a *BattleSpace* or *AeroTech 2* large vessel, each row in the *Weapons* table represents a bay of one or more weapons of the same class. A weapons bay is fired as though it were a single weapon, generating heat and inflicting damage in the same way as a single weapon—even though it may actually consist of many individual weapons.

LINE OF SIGHT

Line of sight (LOS) is simple to determine. Units don't block LOS and there are no elevation levels or terrain, and so there are very few obstacles in space. Only asteroids (p. 34) and the clouds generated when using the Screen Launchers rule (p. 41) block LOS. Measure a line from the center of the attacker's hex to the center of the target's hex to determine if LOS passes

ATTACK DIRECTION



ATTACK TABLE

Base To-Hit Number: Gunnery Skill

Range	Modifier
Short	+0
Medium	+2
Long	+4
Extreme	+8
Target/Intervening Conditions	
Angle of Attack	
Attack against aft	+0
Attack against nose	+1
Attack against side	+2
Target is at 0 velocity	–2
Second or subsequent target	+1
Weapon is capital scale	
vs. target less than 500 tons	+5*
Firing through atmospheric hex†	+2 per hex
Firing into or out of screen hex	+2
Attacker Conditions	
Attacker exceeded Safe Thrust this turn	+2
Attacker is out-of-control	+2
Attacker has pilot/crew damage	+1 per box crossed
Attacker has CIC or FCS critical damage	+2 per box crossed
Attacker has sensors critical damage	+1 per box crossed, or +5 if sensors destroyed
Special Weapons and Equipment	
Weapon is LB-X	–1
Weapon is pulse laser	–2
Weapon is heavy laser or MRM	+1
Aerospace fighter with targeting computer	–1**
Barracuda missile (not teleoperated)	–2

† This applies to atmospheric hexes on the space map, not to hexes on the atmospheric or *BattleTech* maps.
* Does not apply to capital missiles, which are designed to track small targets.
** Only applies to certain weapons (see p. 134, *BMR*).

through these obstructions (in the same manner as described on, p. 25).

FIRING ARCS

The area into which each weapon can come to bear is called a firing arc. This arc remains fixed relative to the craft's nose. Any target to which a unit has line of sight and which lies within a weapon's firing arc may be attacked by that weapon.

Each class of vessel uses slightly different firing arcs to reflect their shape and their weapons. The diagrams on p. 18 illustrate the boundaries for each arc. To determine the exact boundaries of the arcs, use the description of firing arcs (pp. 27–28, *BMR*).

Aerodyne Vessels

Fighters, aerodyne DropShips, and small craft use four weapon arcs—nose, aft and the right and left wing arcs. Aerodyne DropShips and small craft may also mount weapons in the right and left wing (aft) positions.

DropShips, JumpShips and Space Stations

JumpShips, space stations, and spheroid DropShips may fire a full 360 degrees. Their firing arcs are nose, aft, fore-right, fore-left, aft-right and aft-left.

WarShips

WarShips use the same firing arcs as JumpShips, and can also use the left and right broadside arcs.

RANGE

To shoot at a target, first establish the range between that target and the attacker by counting the number of hexes along the shortest route between the two units, including the hex occupied by the target but not the hex occupied by the attacker.

The distance to the target determines the range bracket, and thus which weapons can be fired. In addition, the greater the distance to the target, the harder it is to hit. *AeroTech* 2 uses four standard range brackets for all weapons—Short, Medium, Long and Extreme—with the type of weapon determining the longest range bracket into which it may fire. Depending on the scale of the weapon (standard or capital), the definition of these brackets is different, as shown on the Weapon Range Table. For example, a standard weapon aimed at a target 15 hexes away is at long range, while a capital weapon aimed at the same target is at medium range.

The weapon tables beginning on page 99 contain the range information for each weapon, indicating the maximum range to which each can fire.

MAKING THE ATTACK

The ability to make a successful attack is represented by a to-hit number. The 2D6 die roll result must equal

HIT LOCATION TABLE

FIGHTERS

2D6 Roll	Nose	Aft	Side	Above/Below
2	Nose/Weapon	Aft/Weapon	Nose/Weapon	Nose/Weapon
3	Nose/Sensors	Aft/Heat Sink	Wing/Gear	Wing/Gear
4	Right Wing/Heat Sink	Right Wing/Fuel	Nose/Sensors	Nose/Sensors
5	Right Wing/Weapon	Right Wing/Weapon	Nose/Crew	Nose/Crew
6	Nose/Avionics	Aft/Engine	Wing/Weapon	Wing/Weapon
7	Nose/Control	Aft/Control	Wing/Avionics	Nose/Avionics
8	Nose/FCS	Aft/Engine	Wing/Bomb	Wing/Weapon
9	Left Wing/Weapon	Left Wing/Weapon	Aft/Control	Aft/Control
10	Left Wing/Heat Sink	Left Wing/Fuel	Aft/Engine	Aft/Engine
11	Nose/Gear	Aft/Heat Sink	Wing/Gear	Wing/Gear
12	Nose/Weapon	Aft/Weapon	Aft/Weapon	Aft/Weapon

DROPSHIPS

2D6 Roll	Nose	Aft	Side	Above/Below
2	Nose/Crew	Aft/Life Support	Nose/Weapon	Nose/Weapon
3	Nose/Avionics	Aft/Control	Nose/FCS	Nose/FCS
4	Right Side/Weapon	Right Side/Weapon	Nose/Sensors	Nose/Sensors
5	Right Side/Thruster	Right Side/Door	Side/Thruster	Side/Thruster
6	Nose/FCS	Aft/Engine	Side/Cargo	Side/Cargo
7	Nose/Weapon	Aft/Weapon	Side/Weapon	Side/Weapon
8	Nose/Control	Aft/Docking Collar	Side/Door	Side/Door
9	Left Side/Thruster	Left Side/Door	Side/Thruster	Side/Thruster
10	Left Side/Weapon	Left Side/Weapon	Aft/Avionics	Aft/Avionics
11	Nose/Sensors	Aft/Gear	Aft/Engine	Aft/Engine
12	Nose/K-F Boom	Aft/Fuel	Aft/Weapon	Aft/Weapon

JUMPSHIPS/WARSHIPS

2D6 Roll	Nose	Aft	Side
2	Nose/Life Support	Aft/Fuel	Nose/Weapon
3	Nose/Control	Aft/Avionics	Nose/Avionics
4	Fore-Right /Weapon	Aft-Right/Weapon	Front Side/Grav Deck
5	Fore-Right/Thruster	Aft-Right/Thruster	Front Side/Weapon
6	Nose/CIC	Aft/Engine	Front Side/Docking Collar
7	Nose/Weapon	Aft/Weapon	Front Side/K-F Drive
8	Nose/Sensors	Aft/Engine	Aft-Side/Cargo
9	Fore-Left/Thruster	Aft-Left/Thruster	Aft-Side/Door
10	Fore-Left/Weapon	Aft-Left/Weapon	Aft Side/Weapon
11	Nose/Crew	Aft/Control	Aft/Weapon
12	Nose/K-F Drive	Aft/K-F Drive	Aft/Engine

or exceed this value for the weapon to hit its target. The base target number is determined by the attacker's Gunnery Skill, modified by range, critical damage and other factors, as shown in the Attack Table. All to-hit modifiers are cumulative.

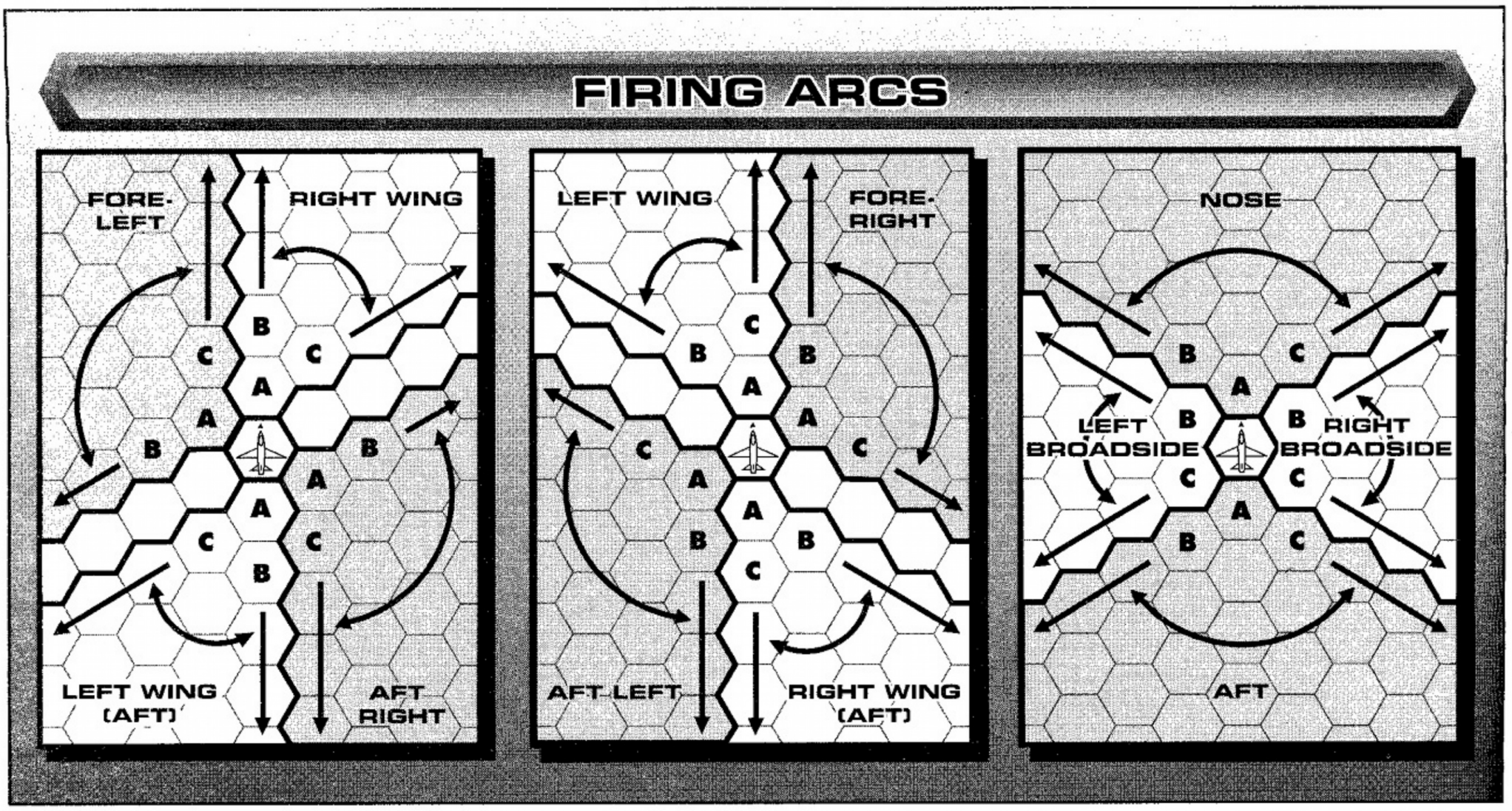
ANGLE OF ATTACK

The direction of the target's movement relative to the attacker—the "angle of attack"—can have a significant impact on the accuracy of a shot. Firing at the aft of the target offers the least amount of relative motion, while firing at the target's side as it flies past offers the greatest difficulty. To determine the angle of attack, simply find the attack direction and use the appropriate modifier as shown on the Attack Table.

Note that when using the Advanced Movement rules (p. 32), the angle of attack is based on the target's heading, which may or may not correspond to its facing.

TELEOPERATED MISSILES

If using teleoperated missiles, consult the *Optional Rules* section p. 41. Screen launchers use additional rules, found on p. 41.



DAMAGE

Every successful attack damages the target. Armor allows a unit to withstand a certain amount of damage. Once the armor is removed, or if the unit suffers a large amount of damage in a single hit, critical damage might result.

HIT LOCATION

When a weapon hits, the attacker must first determine the location of impact.

Attack Direction

First, determine the hexside through which the attack travels, and thus the armor facing the hit. Lay a straight edge on the map from the attacker to the target. If the attack falls directly between two hexsides, the target chooses which side is struck. Fighters and DropShips use four attack directions—nose, aft and the two sides. Larger vessels, such as JumpShips and WarShips, use six attack directions—nose, aft, the two fore-quarters and the two aft-quarters.

Determining Hit Location

To determine the exact location of a hit, the attacking player rolls 2D6 for each weapon or bay that strikes the target and consults the appropriate column on the Hit Location Table (p. 17). Each entry on the table has two parts. The first indicates the armor facing from which damage is subtracted, the second is used for determining critical hits (see p. 19).

Standard Missile Weapons: If the target is a fighter or DropShip (a unit that uses standard-scale armor) resolve attacks with standard-scale missile weapons (ATMs, LRMs, MRMs and SRMs) according to the following rule. The attacker makes one hit-location roll for every 5 points of damage striking the target from an attacking unit in a single Combat Phase Turn. Divide the damage into 5-point groups, similar to LRM damage in *BattleTech* (p. 33, *BMR*). If the target carries capital-scale armor, the damage is applied as a single block.

> *A Marik* Transgressor *fires three large lasers and two medium lasers at the nose of a Davion* Corsair. *Two large lasers and one medium laser succeed in striking the target. The attacker elects to determine the hit location of the two large lasers, followed by that of the medium laser. The first 2D6 roll results in a 6, a nose hit for 8 points of damage, while the second results in a 10, inflicting 8 points of damage to the left wing. The final roll, for the medium laser, results in a 12, another nose hit.*

ARMOR

Every unit has several armor facings that represent protection from different attack directions. Cross off one armor box for each point of Attack Value if the armor and weapons are of the same scale; otherwise, consult the Scale rules.

Scale

Before resolving the damage, consider the relative scale of the attacker to the target. If both vessels are the same scale (standard

vs. standard or capital vs. capital), damage proceeds normally.

When standard weapons are used against capital armor, they cause only one box of damage for every 10 points of their Attack Value (damage inflicted). Round fractions down. This conversion takes place after the attacking vessel has resolved all fire against the target and determined hit locations.

A Slayer *fighter fires five medium lasers and an AC/10 at a* Cameron-*class WarShip. All six weapons hit, and locations are determined randomly. Three medium lasers hit the nose of the WarShip, while the AC/10 and two medium lasers strike the front right armor facing. As WarShip armor is on the capital scale, this damage must be converted. The nose damage, 15 points, is divided by 10 for a result of 1.5, which rounds down to one point. The front right damage of 20 becomes 2 points.*

Capital attacks against standard armor cause 10 boxes of damage for every point of their Attack Value. Capital weapons suffer targeting difficulties against small craft and must apply a +5 modifier against vessels massing less than 500 tons.

A NL/35 strikes a Corsair. *The Attack Value of the NL/35 is 3.5, but because it is a capital-grade weapon targeting a fighter, the damage inflicted on the* Corsair *is multiplied by 10 to 35.*

STRUCTURAL DAMAGE

When the armor in a location is destroyed, subtract half the excess damage (round down) from the unit's SI value. For example, a large laser strikes the wing of a fighter. Only 3 Armor Points remain on the wing, and so 2 points (half of the remaining 5 damage points, rounded down) are subtracted from the fighter's SI.

The Scale rules also apply to SI damage. Capital weapons inflict 10 times as much damage against standard-scale vessels' SI, while standard weapons inflict only one-tenth damage against capital-scale SI.

CRITICAL HITS

Each armor facing has a Damage Threshold, which is equal to 10 percent of its full armor value, rounded up. If a single hit exceeds this threshold or if the damage to that location punches through the armor and affects the SI, critical damage can result.

To determine if a unit takes a critical hit, roll 2D6. On a result of 8 or higher, the appropriate critical hit for that location takes effect, as shown on the Hit Location Table (p. 17).

If a single strike exceeds the Damage Threshold and causes damage to the SI, the player must roll twice for critical hits.

The nose armor of a Slayer *is 94, and so it has a Damage Threshold of 10 in that location (94 ÷ 10 = 9.4, rounded up to 10). Consequently, any single hit inflicting more than 10 points of damage will result in a possible critical hit. In stark contrast, a* Texas-*class battleship has a nose armor value of 234, and so has a Damage Threshold of 24 points of capital-scale damage (or 234 points of standard-scale damage).*

Jon controls a Slayer, *which is hit on the nose by a standard PPC. A standard PPC inflicts 10 points of damage, which equals, but does not exceed, the nose's Damage Threshold. This means there is no risk of critical damage from that hit. The following turn a Gauss rifle attack strikes the nose (hit location result of 6). The 15 points inflicted by the Gauss rifle exceed the Damage Threshold, and so a critical hit may result. Jon rolls 2D6, scoring an 8, sufficient for a critical hit to occur. The critical damage associated with the hit location roll of 6 is an avionics hit, and so one avionics box is crossed off on the* Slayer*'s record sheet.*

VESSEL DESTRUCTION

A unit is considered in play unless its SI is reduced to 0 or it is destroyed by a critical hit. Parts of the vessel might be salvageable if the unit was destroyed in space, but a unit destroyed in atmosphere is a total loss. See *Repair* (p. 39) for more information.

CRITICAL HIT EFFECTS

A hit that inflicts critical damage has the following effects per the hit location roll made for the attack (see Hit Location Table, p. 17). The critical hit effects are defined in the following text, listed in alphabetical order.

Avionics

The flight computer is damaged. The first two hits each impose a +1 penalty on all Control Rolls. The third Avionics critical hit destroys the system and imposes a +5 penalty to Control Rolls. An avionics hit also forces the unit to make a Control Roll.

Bomb

One bomb is rendered useless. If the unit carries no bombs, the critical hit has no effect.

Cargo

Part of the vessel's cargo sustains damage. To determine the percentage of cargo destroyed, divide the amount of damage that caused the critical hit by twice the vessel's SI. Multiply that number by 100, rounding fractions up. For DropShips, the damage value used in this calculation should be at the standard scale. For JumpShips and WarShips, use capital scale damage.

For example, if a cargo critical hit against a DropShip was caused by a PPC (damage value of 10) and the vessel has an SI of 12, 42 percent of the cargo is destroyed ([10 ÷ 24] x 100). Similarly, a 30-point NAC bay inflicts a cargo critical hit against a WarShip with a SI of 60. This destroys 25 percent of the cargo ([30 ÷ 120] x 100).

CIC

The Combat Information Center is damaged. Increase to-hit target numbers by +2 for each CIC critical hit. The third CIC criti-

cal hit destroys the system and prevents the craft from firing.

Control

The pilot/crew must make a Control Roll. If the roll fails, the unit goes out-of-control (see p. 10).

Crew

If a crew location takes a critical hit, cross off one pilot/crew status box. Each vessel can sustain 5 pilot/crew hits. The sixth hit kills the pilot or disables the crew. See *Crew/Pilot Status* (p. 5) for the effects.

Docking Collar

On a DropShip, a critical hit against the docking collar damages the collar so that the ship cannot dock with a JumpShip or WarShip. If the vessel is already attached to a JumpShip or WarShip, it cannot disconnect.

On a JumpShip or WarShip, a critical hit against the docking collar damages one randomly determined docking collar. That collar can no longer be used. If a DropShip is already attached to the collar, it cannot disconnect.

Door

A cargo/vehicle door is destroyed.

Engine

Against a fighter, each engine hit reduces the unit's Safe Thrust by 2 (adjust the Maximum Thrust accordingly). Each engine hit also generates 2 points of heat. If the Safe Thrust value is reduced to 0, the unit cannot spend thrust and the heat penalty remains in effect. Further, 3 engine critical hits destroy the fighter's engine and the unit is effectively permanently shut down (see *Shutdown Effects*, p. 12).

Against large non-fighter units, each engine critical hit reduces the unit's Safe Thrust by 1 (adjust the Maximum Thrust accordingly). If the unit suffers 6 engine critical hits, the engine is destroyed.

FCS

The Fire Control System is damaged. Increase to-hit target numbers by +2 for each FCS critical hit. The third FCS critical hit destroys the system and prevents the craft from firing.

Fuel

Each hit to the fuel tank drains 3D6 points of fuel. In addition, every time a fuel tank critical hit occurs, roll 2D6. On a result of 10 or more, the fuel tank explodes and the vessel is destroyed.

See also the optional fuel rules (p. 37), which provide different effects if the fuel tank is empty.

Gear

The landing gear is damaged. Modify Control Rolls to land by +5. Subsequent gear critical hits have no additional effect.

Grav Deck

A randomly determined grav deck is rendered inoperative.

Heat Sink

For a standard-scale attack, this critical hit destroys a heat sink, reducing the amount of heat the craft can dissipate by 1 (or by 2 if the unit mounts double heat sinks). This critical hit destroys 10 heat sinks if the attack was made with a capital-scale weapon.

K-F Boom

The DropShip's K-F boom is damaged, and the craft cannot be carried through hyperspace.

K-F Drive

Part of the JumpShip or WarShip's K-F drive is damaged. Reduce the K-F drive integrity by 1 point per critical hit. If the integrity is reduced to 0, the unit cannot jump.

Life Support

The life support system fails. Crew and passengers must put on spacesuits. Modify all Control Rolls by +2. Subsequent life support critical hits have no additional effect.

Sensors

The unit's sensors are damaged. Modify the to-hit number by +1 for each sensor box crossed off. The sensors can suffer two hits and remain operational. The third sensor hit destroys the system. Units with destroyed sensors can still fire, but must add a +5 to-hit modifier.

Thruster

The attitude control thrusters on the indicated side are damaged. Costs to turn in the direction *opposite* the thruster's location are increased by 1. For example, hits to the left-side thruster increase the cost of turns to the right. Vessels can suffer three hits to the thrusters on each side. The fourth hit renders the thrusters inoperative and prevents turns in that direction (see the roll maneuver, p. 8).

RAMMING ATTACKS TABLE

Base To-Hit Number: 6 + (target Piloting Skill – attacker Piloting Skill)

Modifiers

Attacker existing damage:	
Sensor damage	+1
Avionics damage	+1 per box
Target is:	
Fighter	+4
DropShip	+2
JumpShip	0
WarShip	+1
Space station	–1
Cannot spend thrust	–2
Attacker is:	
Fighter	–2
DropShip	–1
WarShip	+1

ATMOSPHERIC CONTROL MODIFIERS

Condition	Control Roll Modifiers
Per 20 points of damage	+1
Unit is spheroid DropShip	+1
Unit is aerodyne DropShip	0
Unit is fighter	–1

Weapon

One weapon mounted in the target location suffers major damage and ceases to function. The player controlling the target unit chooses which weapon in that location stops working. If there are no weapons in the location, the critical hit has no effect.

COLLISIONS AND RAMMING

Generally, ramming tactics have little use in naval combat. A warrior might, however, see no other way to achieve his objective and, like the legendary Tyra Miraborg, deliberately crash his vessel into an opposing craft. The following rules provide a system for incorporating such attacks into *AeroTech 2* and for resolving accidental collisions that occur when craft go out-of-control (p. 10).

Accidental collisions are resolved immediately.

DELIBERATE ATTACKS

To make a ramming attack, a vessel must first end its movement in the same hex as the target and declare a ramming attack. Like a charge attack in *BattleTech* (p. 41, BMR), the target must already have moved in the turn (or be incapable of moving), and a unit executing a ram cannot itself be rammed in that turn. A ramming vessel cannot fire weapons in the turn it is ramming, though it can be fired upon.

The pilot or vessel commander must next convince himself that a ramming attack is the only option. Roll 2D6. If the result is 11 or 12, the pilot/commander has steeled himself for the task and the unit can ram the target.

For a *MechWarrior, Third Edition* character in this situation, a pilot makes a Very Difficult (+4) WIL Check; a vessel captain makes a Very Difficult Leadership Check.

Even though a ram attack is made after the target moves, that only represents *Aerospace* movement; the target will still attempt to evade the oncoming vessel by moving around in the hex. For example, a fighter will jink back and forth in an attempt to get out of the way of the ramming vessel. Deliberate rams are resolved at the end of the Combat Phase. In order to successfully ram another vessel, the attacker must roll 2D6 and compare the result to the Ramming Attacks Table. Calculate the base to-hit number, then apply any appropriate modifiers from the table for the final to-hit number.

If the ramming vessel is destroyed, the ram attack fails.

DAMAGE FROM COLLISIONS

To determine damage from a collision or ramming attack, roll 1D6. On a result of 1–5, the two vessels collide and suffer full damage as indicated below. A result of 6 indicates only a glancing collision that causes half damage.

The ramming/colliding vessel suffers damage on its nose (or the facing that was "forward" at the time of impact, if using the advanced movement rule, p. 32). The target suffers the damage on the armor facing that corresponds to the hexside from which the attacker entered its hex.

Each vessel causes damage to the other equal to its own mass divided by 10, multiplied by the net velocity of the impact.

The net velocity of the impact is the velocity of the attacker modified by the position and movement of the target (see *Facing* rules, p. 7, or *Advanced Movement* rules, p. 32). If the target is moving directly toward the ramming unit, add its velocity. If it is moving toward the attacker diagonally, add half its velocity, rounded down. If it is moving directly away from the ramming unit, subtract its velocity. And if it is moving diagonally away from the ramming unit, subtract half its velocity (rounded down). If the net velocity is less than 1, treat it as 1.

Apply this damage in a single strike to one location determined by rolling 2D6 on the relevant Hit Location Table. If the damage is more than twice the starting armor of the indicated location, the vessel is automatically destroyed; otherwise, apply the damage and determine any critical hits normally.

EFFECTS OF THE ATMOSPHERE

The following rules apply only to craft in atmosphere, *space/atmosphere interface and ground hexes as described in Atmospheric Operations* (p. 11). These rules do not apply when using the Ground Support Missions or Atmospheric Combat rules.

Atmospheric distortion, clouds and winds dramatically reduce the ranges of weapons carried by fighters and DropShips. To reflect this, each atmosphere and ground hex counts as 6 hexes for range purposes. If this conversion results in a shot passing through one attack range and into the next, use the longer range.

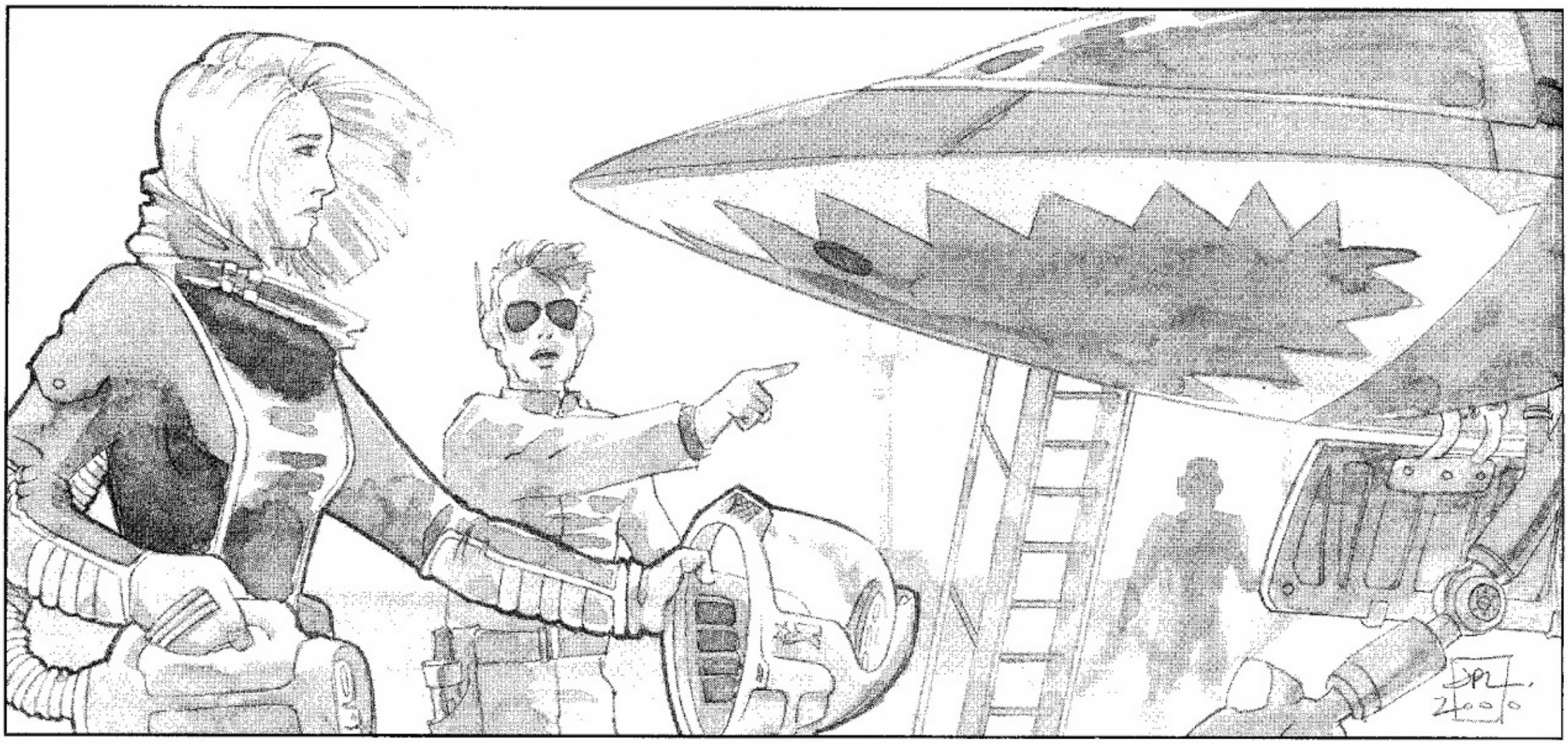
The space/atmosphere interface also reduces the effective ranges of weapons and counts as 3 hexes for purposes of determining range. Standard weapons can fire into but not through an interface hex. A unit must occupy an interface hex in order to fire at units both in space and in the atmosphere.

Only capital-scale weapons can pass through the interface. (See *Orbit-to-Surface Fire,* p. 39, for more information on space-to-surface fire.)

A craft in atmosphere must make a Control Roll in the End Phase of every turn in which it suffers damage, using the modifiers shown on the Atmospheric Control Modifiers Table, p. 20.

A unit considered out-of-control in the atmosphere automatically moves 1 hex (chosen by the controlling player) toward the planetary surface and crashes if it enters or occupies a ground hex.

GROUND SUPPORT MISSIONS



Aerospace support of ground troops is the central theme of *AeroTech 2*. The full-blown rules provided in *Atmospheric Combat* (p. 28), however, might bog down the game too much for players who prefer the action to center on the BattleMechs. The following rules present a simplified version of the *AeroTech* atmospheric mechanics for quick-and-easy use of aircraft in *BattleTech* games. The radar map offers an abstract representation of the airspace around the battlefield for use in place of atmospheric hexmaps.

THE RADAR MAP

The radar map (p. 23) represents the air space around the *BattleTech* play area. It is divided into a series of concentric rings, each representing increasing distances from the ground battle. To use the radar map, first photocopy it. Each ring is divided into one or more zones to regulate movement. The radar map should be placed on the table near the ground battle so that units can move easily between maps.

The central zone corresponds to the *BattleTech* map and represents the air directly above the battlefield. The *BattleTech* play area fits entirely within this zone, regardless of how large it is, with "north" as indicated on the radar map oriented to one hexside.

The inner ring represents the airspace near the *BattleTech* maps, but out of immediate reach of ground units. Units in this area can quickly react to events on the battlefield. The inner ring is divided by dotted lines into six parts to help players record each unit's direction of approach to the central zone.

The middle ring represents an intermediate distance from the *BattleTech* maps. Units in this ring are a considerable distance from the battlefield, but fast units can still react to events on the ground. This ring is divided into six zones, lettered A through F.

The outer ring represents the farthest distance from the *BattleTech* maps at which units are still considered to be involved in the fight. This ring is divided into twelve zones, numbered 1 to 12 and corresponding to the face of a clock.

DEPLOYING FORCES

Some scenarios call for units to be deployed in specific zones. If the scenario does not specify a zone, aerospace forces should set up in the outer ring, directly opposite each other and on the sides corresponding to their deployment on the *BattleTech* maps.

For example, if a side's units enter the *BattleTech* map through the "south" edge (hexrow xx17), its aerospace forces should start in zone 6. If a side's units enter the *BattleTech* map through the "north" edge (hexrow xx01), its aerospace forces should start in zone 12. If a side's units enter the *BattleTech* map through the "east" edge (hexrow 15xx), its aerospace forces should start in zone 3. And if a side's units enter the *BattleTech* map through the "west" edge (hexrow 01xx), its forces should start in zone 9.

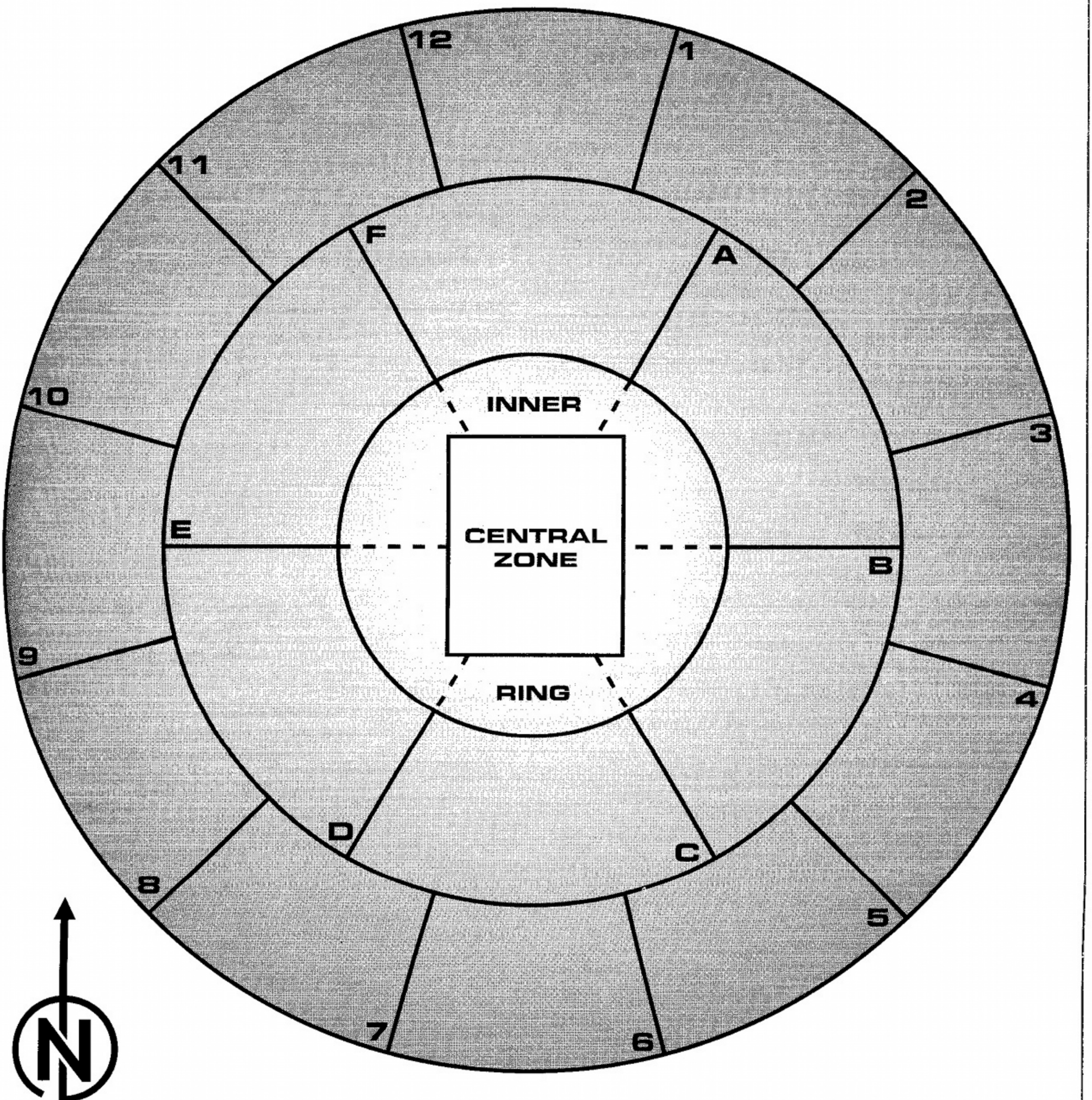
INITIATIVE

Aerospace units use the standard *BattleTech* rules for Initiative and movement order. On their Initiative, a player may choose to move a ground or air unit.

MOVEMENT

Each region on the radar map represents a large, abstract area. This allows units on the radar map to move between

AEROTECH 2 RADAR MAP



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regions according to their Safe Thrust values (rather than standard movement rules).

Units with a current Safe Thrust of 10 or less may move one zone per turn. Units with a current Safe Thrust higher than 10 can move two zones per turn. A unit must move at least one zone per turn, and each move must be between adjacent zones. An unlimited number of fighters may occupy each zone.

Units ending movement in the central zone are assumed to be making a ground attack against targets on the *BattleTech* map. Such units must be assigned a flight line, which is a line of hexes over the *BattleTech* maps (see *Air-to-Ground Fire,* p. 24). The first hex of this flight line must be on the map edge corresponding to the direction from which the unit approached the central zone from the middle ring.

Aerospace units may make a single pass over the battlefield, returning to the radar map at the end of the Combat Phase. Players also may use the *Fighters on BattleTech Maps* rules (p. 30) and leave the fighters on the maps. Air units leaving the *BattleTech* playing area are placed in the central zone of the radar map.

Units moving outward from the outer zone are removed from play and cannot reenter the game.

Note that ground units and VTOLs cannot leave the *BattleTech* map unless such movement is provided for in the scenario rules. If they leave the *BattleTech* map, they are removed from play (or otherwise accounted for, depending on the rules of the scenario).

COMBAT

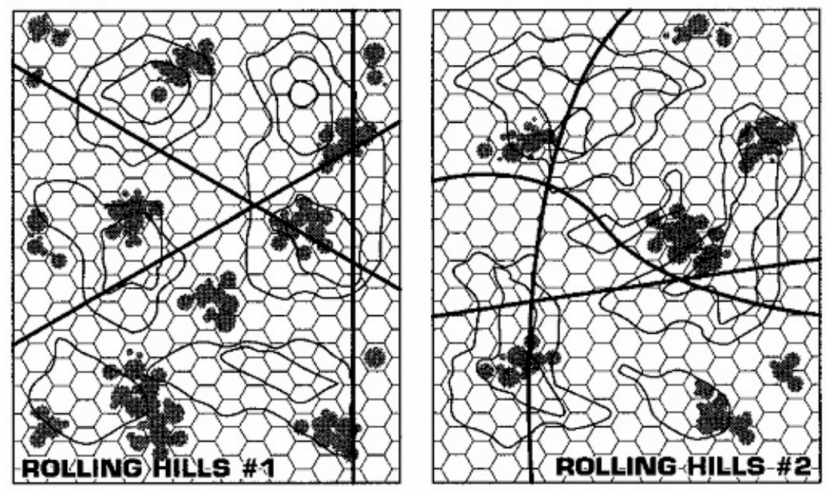
Aerospace units can take part in air-to-air and air-to-ground combat. The latter, involving integration with *BattleTech*, is the main focus of this section. A quick-playing, abstract air-to-air system is presented for those who want to keep the game's focus on the ground. Dogfights can be played using the *Atmospheric Combat* rules, p. 28.

AIR-TO-GROUND FIRE

Though more fragile than ground-based units, fighters can carry a massive array of weapons which allow them to cripple or destroy ground vehicles or 'Mechs from the relative safety of the sky. Even a handful of fighters can provide a force with a devastating advantage.

When a fighter ends its movement in the central zone, or an atmospheric hex containing a *BattleTech* map if using the *Atmospheric Combat* rules, it can attack targets on the map. The player must first nominate an attack line, a row of hexes over which the fighter will pass. This row must form a straight line and coincide with the fighter's flight line (see p. 24). Units using the *Fighters on BattleTech Maps* rules use their actual flight path (the hexes they moved through during the turn) rather than designating a flight line.

These simplified rules do not account for altitude. Because these rules are also intended for use with the detailed atmospheric combat rules, however, they include references to altitude levels.

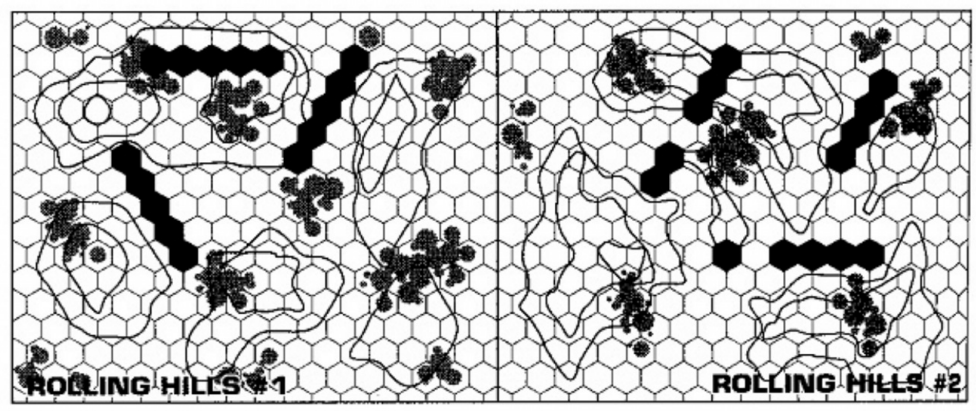


LEGAL **ILLEGAL**

Strafing

Craft flying within three altitude levels of the ground can make strafing attacks against ground targets. A fighter making this type of attack chooses from one to five consecutive hexes along the attack line. These hexes must be in a straight line.

The pilot can choose to fire one, some or all of his energy weapons (lasers, pulse lasers and PPCs) when strafing. These weapons must roll to strike every target, hostile or friendly, in all targeted hexes. The base to-hit number for these attacks is the pilot's Gunnery Skill +4, modified by the target's movement and terrain (use the standard modifiers on p. 32 of *BMR*, except for prone and partial-cover) and any applicable critical damage to the strafing fighter. Aircraft flying at NOE also suffer a +2 to-hit penalty as described in *Atmospheric Movement* (p. 11).



LEGAL **ILLEGAL**

Make separate to-hit rolls for each weapon against each target. Apply weapon hits using the standard *BattleTech* rules. Use the column of the Hit Location Table (p. 33, *BMR*) that corresponds to the attack direction, based on the direction from which the fighter entered the target's hex, not its position at the end of the Movement Phase.

Ground units are considered sheltered by the terrain in their hexes. However, fighters flying at NOE find it harder to establish a clear line of sight and so must also take into account the terrain in the hex adjacent to the target and along the flight line in the direction the attacking unit entered the target's hex. If the hex in front of the target is two or more levels higher than the target, the target is in a dead zone and cannot be attacked.

GROUND SUPPORT MISSIONS

Striking

An attacker flying at Altitude 5 or less can make a precision strike on a single unit or building. The target must lie along the attack line or the fighter's flight path. Making a strike attack reduces the attacker's Altitude by one level. Aircraft flying at NOE cannot make strike attacks.

The fighter may fire one, some, or all of its weapons at the target. The base to-hit number for these attacks is the pilot's Gunnery Skill +2, modified by the target's movement and terrain (use the standard modifiers on p. 32 of *BMR*, except for prone and partial-cover) and any applicable critical damage to the striking fighter. Make separate to-hit rolls for each weapon. Apply weapon hits using the standard *BattleTech* rules. Use the column of the Hit Location Table (p. 33, *BMR*) that corresponds to the attack direction based on the direction from which the fighter entered the target's hex, not its position at the end of the Movement Phase.

Bombing

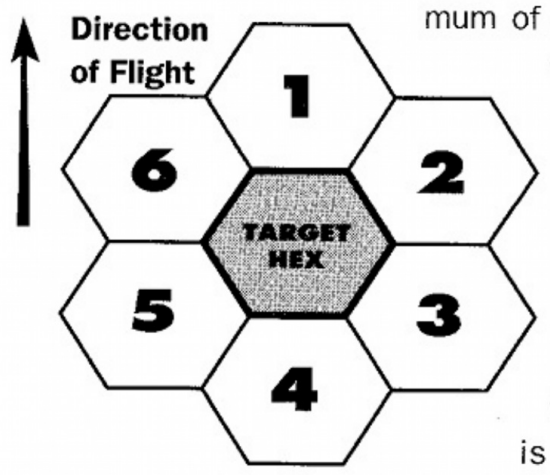
Most fighters are equipped to carry bombs, though the capacity varies depending on the size and engine power of the fighter. Each fighter can carry one bomb for every 5 tons of mass, but each increment of 5 bombs carried reduces the unit's Safe Thrust by 1. For example, a 20-ton fighter can carry four bombs (20 ÷ 5) but doing so will reduce its Safe Thrust by 1. A 30-ton fighter can carry six bombs (30 ÷ 5) but this would reduce its Safe Thrust by 2. Re-calculate Maximum Thrust based on the adjusted Safe Thrust.

A unit can make either a bombing attack or a weapons attack in a single turn. Bombs can be delivered in two ways: dive-bombing or level-bombing. Dive-bombing is more accurate, but requires the attacker to lose altitude and exposes him to return fire. Level-bombing is less precise, but allows attacks against a strip of ground, much like a strafing run.

A fighter at Altitude 5 or less can make a dive-bombing attack against a single hex on the attack line (or flight line), though doing so requires the fighter to dive two altitude levels. The fighter can drop one, some or all of its bombs in the attack.

The base to-hit number for a dive-bombing attack is the pilot's Gunnery Skill +2. Because the attack is directed against a hex rather than a specific unit, terrain and target movement modifiers do not apply, though applicable critical damage to the bombing fighter does. If the attack is successful, all bombs explode in the designated hex. If the attack fails, the bombs scatter before exploding. To determine the direction of the scatter, roll 1D6 for each bomb dropped and consult the Dive-Bombing Scatter Diagram (p. 26). Roll 1D6 again to determine the number of hexes by which the attack deviates from its target. The resulting hex becomes the impact hex.

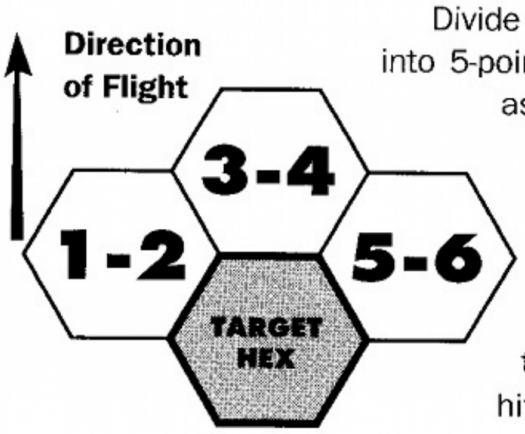
Level-bombing is less precise, but allows attacks against a larger target area. Fighters can make level-bombing attacks from any altitude level, but suffer a to-hit modifier equal to their altitude level (+3 when using the *Ground Support Missions* rules). Level-bombing works similar to strafing, allowing a fighter to attack a continuous row of hexes along the attack/flight line. Level-bombing can attack up to 10 hexes, but the fighter must drop a minimum of one bomb and a maximum of two bombs in each hex. All targeted hexes must be adjacent. If the unit carries several types of bombs, the pilot chooses which are targeted on which hexes.



DIVE-BOMBING SCATTER DIAGRAM

The base to-hit number for a level-bombing attack is the pilot's Gunnery Skill +2. No terrain or target movement modifiers apply; the player must apply appropriate critical damage and altitude modifiers. Make one to-hit roll for each hex targeted. If the roll succeeds, the bombs land in the designated hexes. If the attack fails, the bombs scatter before exploding. To determine the direction of the scatter, roll 1D6 for each bomb dropped and consult the Level-Bombing Scatter Diagram. Roll 1D6 again to determine the number of hexes by which the attack deviates from its target. The resulting hex becomes the impact hex.

The various types of bombs available are described below. Players must designate the types of bombs their fighters are carrying before play begins, writing their choices clearly on each fighter's record sheet.



LEVEL-BOMBING SCATTER DIAGRAM

Divide the damage inflicted by bombs into 5-point groups in the same manner as for LRM and artillery damage. Targets in the hex of impact will suffer damage as if they were punched in the front or the back. Roll 1D6. On a result of 1–3 the attack hits the front; on a result of 4–6 it hits the back. Some munitions also attack units in surrounding hexes. Treat such attacks as originating in the hex of impact when determining the attack direction.

High Explosive (HE): HE bombs cause 10 points of damage to all units in the target hex.

Cluster: Cluster bombs inflict 5 points of damage on targets in the impact hex and in the adjacent six hexes.

Laser-Guided (LG): Laser-guided bombs home in on targets designated by TAG equipment (p. 134, *BMR*). They act as HE bombs except when targeted against a unit designated by a TAG unit; against such units, modify by –2 all to-hit numbers for the bomb.

Inferno: An inferno bomb creates a fire in the hex of impact (even open water) that burns for 30 turns. Use the fire rules (pp. 74–75, *BMR*) and the inferno rules (p. 131, *BMR*) to determine the effect of inferno bombs.

Mines: Similar to FASCAM (Thunder) submunitions, a mine-laying bomb creates a 20-point conventional minefield in the hex of impact and in each of the adjacent six hexes. The Thunder

LRMs rules (p. 132, *BMR*) apply to mine bombs.

Arrow IV: Rather than carrying the full Arrow IV system, fighters can carry individual Arrow IV missiles. In this case, each missile occupies the same space as five bombs. Arrow IV missiles can attack targets on the map that the fighter occupies. They can also fire at targets on nearby mapsheets, up to the Arrow IV's standard range. On the radar map, the missiles can be fired at a range of one zone, allowing fighters in the inner ring to attack units on the *BattleTech* map. Use the standard Arrow IV rules (pp. 123–24, *BMR*) to determine the effects of Arrow IV missiles. Arrow IV missiles cannot be fired by units at Altitude 3 or lower (unless using the *Ground Support Missions* rules).

TAG: Not a weapon in its own right, TAG can be used to designate targets for Arrow IV attacks, artillery, laser-guided bombs or semi-guided LRMs. TAG units can be built into an aircraft's fuselage in the same way as a weapon, or carried as an external pod. Pod-mounted TAG units occupy the same space as one bomb. To designate a target, the fighter must be at Altitude 5 or higher (unless using the *Ground Support Missions* rules). The target must be on the *BattleTech* map that corresponds to the fighter's atmospheric hex, or within 15 hexes if the fighter is also on the *BattleTech* map. The base to-hit number for the system is the pilot's Gunnery Skill +2. The designating fighter cannot make any other attacks while attempting to designate a target. Homing Arrow IV missiles attack per the rules on pp. 71–72 of *BMR*.

Dumping Bombs

Fighters usually drop bombs only in the Weapon Attack Phase. Some circumstances, such as engine critical hits, can require the aircraft to jettison bombs in order to remain aloft. To carry out an emergency bomb dump, the player specifies the number of bombs to be dumped and makes a Control Roll. A successful roll indicates that the desired bombs are dumped. A failed roll indicates all bombs remaining on the craft were dumped. Dumped bombs do not inflict damage when they land. Players can also carry out non-emergency bomb dumps using the rules for *Dumping Ammunition* (p. 73, *BMR*). The fighter cannot exceed Safe Thrust during the turn it is dumping its bombs. However, no ammunition explosion results if a fighter dumping its bomb load is hit in the aft location.

GROUND-TO-AIR FIRE

Any vehicle, BattleMech or installation (not infantry or battle armor, unless otherwise noted) on a *BattleTech* map can fire at an *AeroTech* unit that ends its movement over that map. In the *Ground Support Missions* rules, any unit in the central zone is a valid target. The unit need not have made a ground attack that turn.

Ground units that fire at aircraft cannot fire at any other units in the same turn.

Range is determined based on the target unit's ending position, unless the attacker was struck by the target in this turn, in which case the range is considered 0 hexes. In this case, the attack takes place as the target swoops directly overhead. Add 2 hexes to the range for each level of the target's altitude (6 hexes if using the *Ground Support Missions* rules). Minimum range modifiers do not apply to attacks against *AeroTech* units.

As for ground units, the attack direction is based on the target's position at the end of its movement. Use the standard *BattleTech* rules to apply damage to the fighter, using the above/below column of the Hit Location Table (p. 17).

All ground units have LOS to *AeroTech* units at Altitude 2 or higher. Because of ground clutter, units only have LOS to fighters operating at NOE if they were on the flight line or within 1 hex of it, or if they have LOS to the fighter's final position. Trace LOS in this case as if the fighter was five levels above its hex.

Flak

The Flak special-case rule applies to airborne fighter, DropShip and small craft units in the same way as to VTOLs (p. 75, *BMR*).

ABSTRACT AIR-TO-AIR COMBAT

Two fighters ending a turn in the same region can engage in combat. Both pilots make a Piloting Skill Roll. Add half of each fighter's Safe Thrust (round down) to its Margin of Success (or subtract it from the Margin of Failure, to a minimum of 1).

If both rolls fail or both succeed, the combat takes place at extreme range, with the two fighters facing each other. Both aircraft may use wing- and nose-mounted weapons, with hits on their opponent rolled on the nose column of the Hit Location Table, p. 17.

If one pilot succeeds and the other fails, the winner can nominate the range of engagement. Further, if the MoS was 5 or more, the winner is tailing the other fighter—the winner's fighter has managed to maneuver into the rear arc of the enemy aircraft. The tailing aircraft may use wing- and nose-mounted weapons, with hits on the opponent rolled on the aft column of the Hit Location Table, p. 17. The tailed aircraft is restricted to firing only aft weapons and must roll for hits on the nose column of the Hit Location Table, p. 17. Attacks are resolved as in a one-pilot success.

At the end of the turn, the players can choose to continue or break off the engagement. If both choose to continue the battle, the units remain in the same region and begin by making Piloting Skill Rolls to determine position (as described above). If both choose to end the engagement, their aircraft are free to move according to the standard rules in the next turn.

If one player chooses to continue the engagement and the other wishes to end it, both players make another Piloting Skill Roll, reducing the target number by 2 for the tailing aircraft (or player) and increasing it by 2 for the tailed aircraft (player). Add the MoS to the aircraft's Safe Thrust value (or subtract it from the MoF, to a minimum of 1). The pilot with the higher MoS decides if the engagement continues. In the case of a tie, the fighter with the higher Safe Thrust decides if the engagement continues.

ATMOSPHERIC COMBAT

The action in *AeroTech 2* centers on ground support missions and atmospheric combat. *Ground Support Missions* (p. 22) presented an abstract, fast-playing version of air support. The following rules offer a more complex and realistic system for incorporating ground support attacks into *BattleTech*.

This section uses the standard *AeroTech 2* rules, except where noted.

TERRAIN AND ALTITUDE

Atmospheric operations use the *BattleTech* hex-based maps, either the terrain side or the blank side. Each hex on atmospheric maps is 500 meters across, roughly equivalent to an entire *BattleTech* mapsheet.

Atmospheric operations divide mapsheets into ten horizontal layers (altitude levels), from the ultra-low NOE to very high. Each unit in the atmosphere operates at one of these altitude levels.

If players choose to use the printed side of a *BattleTech* mapsheet, the terrain determines where aircraft fly. Each elevation level on the mapsheet corresponds to an altitude level. For example, a hill marked elevation Level 2 equals Altitude 2. Aircraft can enter that hex only if flying at Altitude 3 or higher, or at Altitude 2 if attempting to land. Wood hexes rise one level above the underlying terrain.

Most craft fly at Altitude 4. Only fighters on ground attack missions or those attempting to land fly at NOE or very low (Altitudes 2 or 3). Flying at NOE means the fighter must hug the ground by staying approximately 10 meters above the underlying terrain. Aircraft with damaged sensors cannot fly at NOE.

Units dropping from Altitude 1 (NOE) to Altitude 0, or entering a hex with an elevation level equal to the aircraft's altitude, must land or crash. Units that move from Altitude 10 to Altitude 11 have climbed into space (row 1 of the atmosphere on the space map).

ALTITUDE LEVEL TABLE

Altitude Level	Minimum (in meters)	Maximum (in meters)
11 (Space)	18,000+	
10	5,001	18,000
9	2,001	5,000
8	1,001	2,000
7	751	1,000
6	501	750
5	251	500
4	151	250
3	101	150
2	51	100
1 (NOE)	1	50
0 (Ground)	0	0

STRAIGHT MOVEMENT TABLE

Effective Velocity	Minimum Straight Movement (in hexes) Aerospace Fighter	Conventional Fighter	Aerodyne DropShip
1–3	1	1	1
4–6	1	1	2
7–9	2	1	3
10–12	3	2	4
13–15	4	3	5
16+	5	4	6

CRASHES

When a unit's altitude matches the elevation level of the hex it occupies, and it does not attempt to land (see p. 37), it crashes. The controlling player rolls 2D6, multiplying the result by 10 and then by the velocity of the unit. The result is the number of points of damage the unit suffers from the crash. Apply damage to randomly determined locations in 10-point groups. If the unit is a fighter or an aerodyne DropShip, use the Nose Hit Location Table for the appropriate unit class. If the vessel is a spheroid DropShip, apply the damage using the Aft Hit Location Table.

TIME SCALE AND TURN SEQUENCE

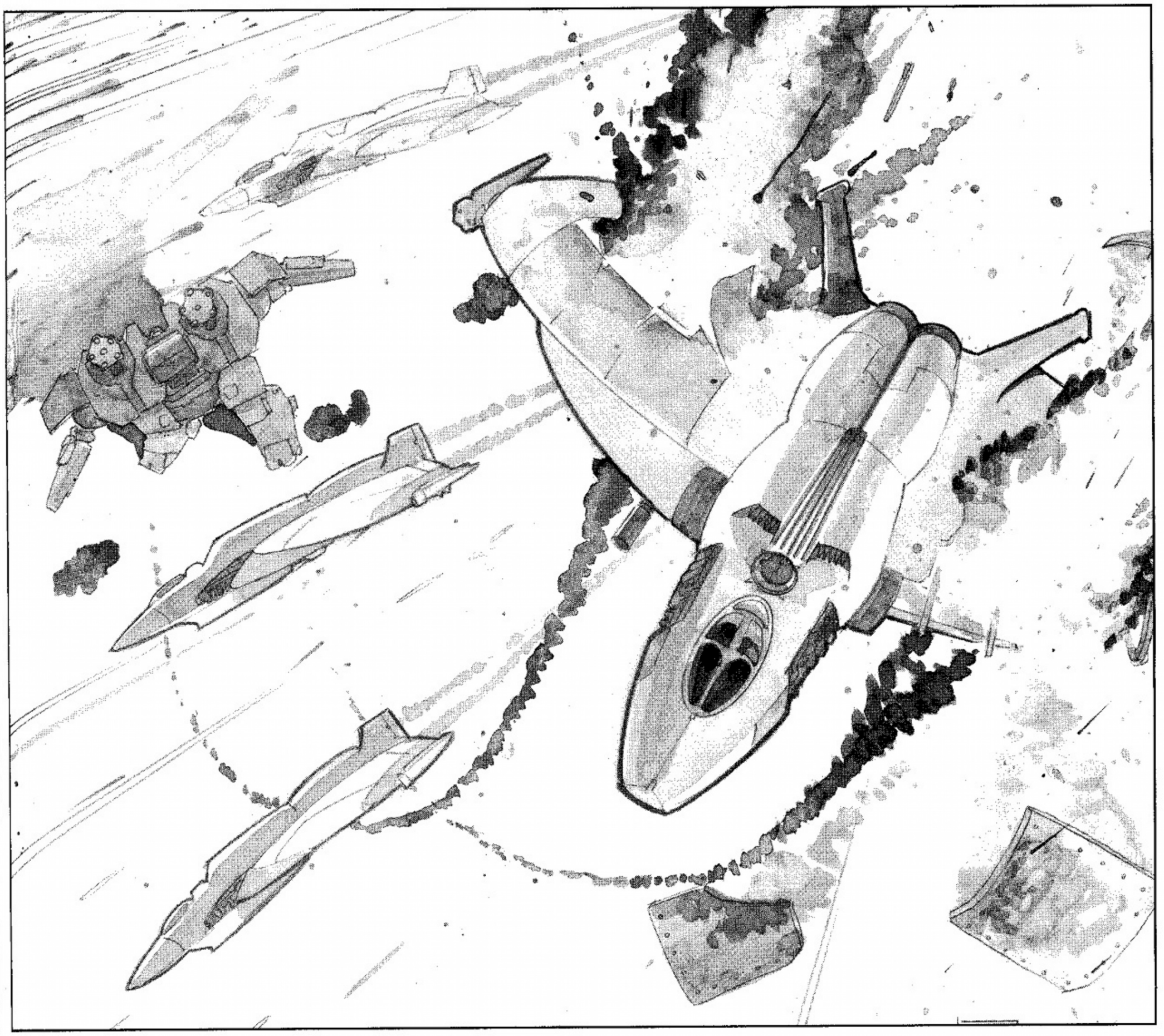
Turns on the atmospheric board represent 10 seconds, with one *AeroTech* turn corresponding to one *BattleTech* turn. To reflect this, an aerospace Movement Phase occurs between the ground Movement Phase and the Weapon Phase (see p. 13, *BMR*). All ground units move, then all aerospace units move.

Because space turns represent one minute, six atmospheric or *BattleTech* turns take place for each space turn. During play, the six atmospheric turns come first, followed by one space turn. Aircraft moving between the space and atmosphere maps are removed from the map at the end of their turn and enter the new map at the beginning of the next Movement Phase.

For example, an aircraft on the atmospheric map that moves to Altitude 11 in the third atmospheric Movement Phase is removed from the map. It enters the space map on row 1 of the atmosphere during the next space Movement Phase, which takes place after the sixth atmospheric turn.

MOVEMENT

Units moving on the atmospheric map steadily lose speed unless they spend Thrust Points to offset the atmospheric resistance. At the beginning of each turn, reduce the velocity of atmospheric units by 5, to a minimum of 0. This reduction can be offset by spending Thrust Points during the Movement Phase (1 Thrust Point increases or decreases velocity by 1 point). Units may not fly at a velocity greater than twice their Safe Thrust speed in atmosphere. Fighters and aerodyne DropShips



that drop to a Velocity of 0 will stall. Stalled units fall one altitude level and must make a Control Roll.

Each turn, a unit must move a number of hexes equal to half its velocity, rounded up. *Special Maneuvers* (p. 31) can reduce the number of hexes a unit must move.

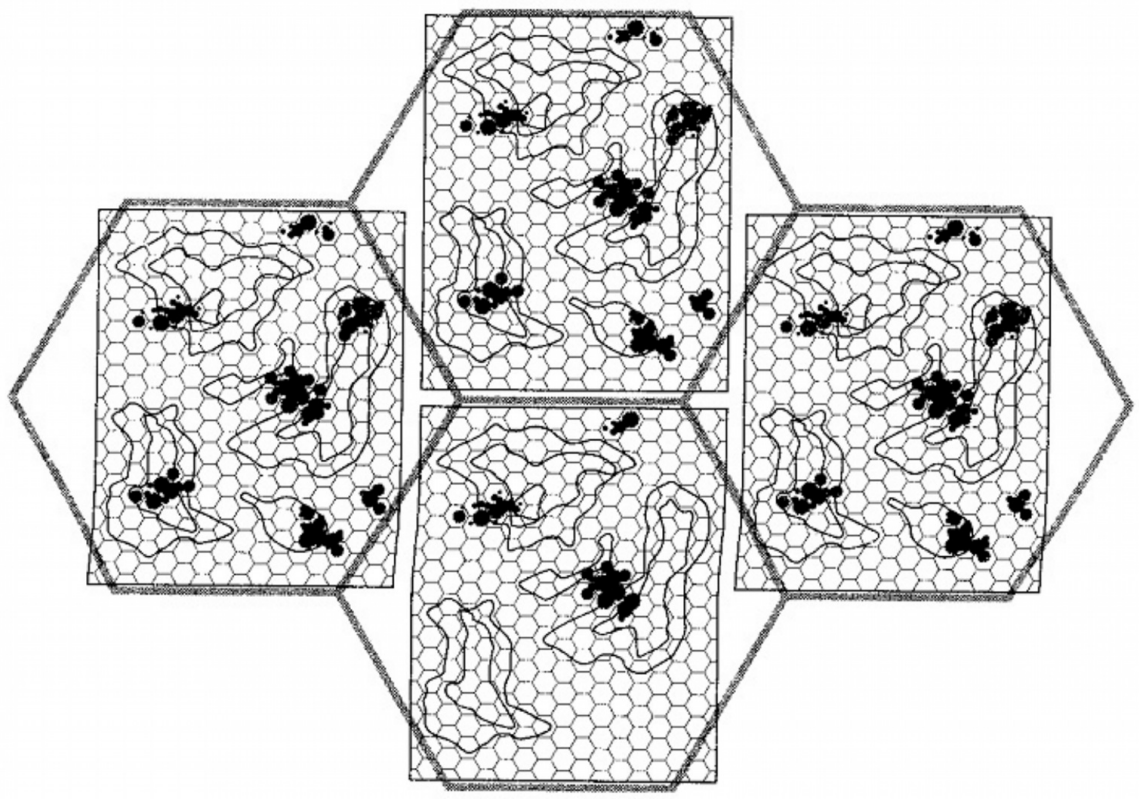
TURNING

While operating in the atmosphere, fighters and aerodyne DropShips do not spend Thrust Points to turn. Instead, they use control surfaces built into their wings to turn and change altitude. These allow the unit to make a number of "free" turns depending on the unit type and effective velocity. The effective velocity is equal to the craft's actual velocity unless the unit spends thrust to reduce it, allowing for tighter turns. The faster a unit moves, the fewer free turns it receives.

Before it can make a turn, a unit must move in a straight line at least the number of hexes shown on the Straight Movement Table (p. 28). Note that atmospheric (conventional) fighters have a maneuverability advantage over aerospace fighters, while aerodyne DropShips are less maneuverable.

For example, an aerospace fighter traveling at an effective Velocity of 7 must move 2 hexes before making a turn. A conventional fighter at the same effective velocity would need to move only 1 hex before turning. An aerodyne DropShip would need to move 3 hexes.

AEROTECH/BATTLETECH HEXES



STRAIGHT MOVEMENT ON BATTLETECH MAPS TABLE

Effective Velocity	Minimum Straight Movement (in hexes)
1	5
2	6
3	8
4	10
5	13
6	16
7	20
8	25
9	32

Regardless of velocity, a unit can only make one turn of 1 hexside in each hex.

Units may also spend Thrust Points to change altitude. Climbing one altitude level costs 2 Thrust Points. Units may descend altitude levels for no Thrust Point cost, and if a fighter descends two or more altitude levels in a turn, it gains an additional point of velocity (to maximum Velocity of 12) for that turn. If a unit descends more than one level in a single turn, it must make a Control Roll, with a modifier equal to the number of altitude levels descended.

Effective Velocity: To make tighter turns, a fighter or aerodyne DropShip can spend Thrust Points to reduce its effective velocity at the beginning of the Movement Phase. To reduce a unit's effective velocity by 1 costs a number of Thrust Points equal to the unit's actual velocity. The effective velocity can be reduced multiple times in a single turn (to a minimum of 1) if the necessary thrust is spent each time.

Roll: Units in atmosphere cannot roll simply by spending Thrust Points. They must instead perform the maneuver as a half-roll (see *Special Maneuvers*, p. 31).

The pilot of an aerospace fighter with a Velocity of 7 wants to make tighter turns. As indicated on the Straight Movement Table, the craft will need an effective Velocity of 6 or less. Reducing the effective velocity 1 point costs 7 Thrust Points. It would cost an additional 7 points to reduce the effective velocity to 5.

SPHEROID DROPSHIPS

Spheroid DropShips can operate in atmosphere. Unlike fighters or aerodyne DropShips, such units do not have a facing because they effectively face "up." Instead, they can spend 2 Thrust Points to move to any adjacent hex, or spend 2 Thrust Points to remain stationary. The cost for spheroid DropShips to change altitude is the same as for aerodyne craft, though they do not gain free velocity for descending two or more altitude levels in a turn. If a spheroid DropShip does not or cannot spend Thrust Points, it loses one altitude level each turn.

AEROSPACE UNITS AND BATTLETECH

Though each *BattleTech* map roughly corresponds to one atmospheric hex, the rectangular mapsheets and the hexagons do not precisely match. Players can approximate the relationship between *BattleTech* mapsheets and *AeroTech* hexes by arranging the *BattleTech* mapsheets as shown in the diagram above.

FIGHTERS ON BATTLETECH MAPS

The most exciting way to use fighters in the game is to fly them directly onto the *BattleTech* map, moving them and engaging the enemy in the same way as other battlefield units. This requires a large *BattleTech* playing area, ideally an arrangement of nine, twelve, sixteen or more mapsheets. These should be laid out 3 x 3, 3 x 4 and so on to provide enough room for the fighters to maneuver.

Use the movement rules described in this section for units operating on the *BattleTech* maps, except that a unit must move 8 *BattleTech* hexes for each point of velocity.

Use the turning rules described in this section, except that straight movement required before turns has more effect at this scale. See the Straight Movement on *BattleTech* Maps Table for the minimum number of *BattleTech* hexes a unit must move in a straight line between 1-hexside turns.

Fighter units operating on *BattleTech* maps ignore all terrain features for movement.

Fighter units can exit the *BattleTech* map edge, in which case they appear on the corresponding *AeroTech* hex or the inner ring of the radar map and move according to the appropriate rules.

SPECIAL MANEUVER TABLE

Maneuver	Min/Max Velocity	Thrust Cost	Piloting Modifier	Effect
Loop	Min 4	4	+1	The unit spends its first 4 points of velocity in the loop, though the actual velocity remains unchanged. The remainder is spent normally.
Immelmann	Min 3	4	+1	The unit gains two altitude levels and ends the maneuver facing any hexside. Velocity drops by 2. The remainder is spent normally.
Split-S	Any	2	+2	The unit loses two altitude levels and ends the maneuver facing any hexside. Velocity increases by 1.
Hammerhead turn	Any	Velocity	+3	The unit remains in the hex it started, but turns 180 degrees.
Half-roll	Any	1	–1	The unit rolls 180 degrees, reversing left and right sides and up/down facings.
Barrel roll	Min 2	1	0	The unit rolls 360 degrees, ending with the same facing. Velocity drops by 1.
Side-slip	Any	1	0	Instead of moving into the hex directly ahead, the unit moves into the front-left or front-right hex without changing facing.

Alternatively, if all players agree not to use the atmospheric rules, simply leave the fighter near the map edge when it flies off the map. In that turn the fighter can be attacked, but only by units it made attacks against that turn. It cannot be attacked in subsequent turns until it returns to the map.

Players should place a die or scrap of paper next to the fighter indicating the number of turns before it can return to the map (see the Fighter Return Table). In the End Phase of each subsequent turn, reduce this number by 1. On 0, in the next Movement Phase the fighter can reenter the map through the same map edge by which it left. When using these simplified rules, a fighter can make a maximum number of attack runs (leaving the map and returning) equal to its Safe Thrust value.

Fighter units can also move from the atmospheric map to the *BattleTech* maps, with the controlling player selecting an entry hex along the map edge that corresponds to the direction of flight. For example, a fighter heading south would enter the north edge of the map through a hex of the pilot's choosing.

FIGHTER RETURN TABLE

Safe Thrust	Turns before Return
1–4	3
5–8	2
9–12	1
13+	0

SPECIAL MANEUVERS

A pilot can exploit his aircraft's agility and the three-dimensional nature of the playing area to execute a number of acrobatic maneuvers. Each maneuver has a minimum or maximum velocity at which it can be executed, as well as a Thrust Point cost. All special maneuvers require a Piloting Skill Roll (with the indicated modifiers). A successful result means the maneuver succeeds. A failed result means the unit must move forward in a straight line a number of hexes equal to half its velocity, rounded up, for a minimum of 1 hex. With the exception of a side-slip, which can be executed at any time during movement, special maneuvers occur at the start of the Movement Phase. Each unit can make only one special maneuver per turn.

AIR-TO-AIR COMBAT

Atmospheric combat uses the same rules as space encounters, with the following exceptions.

Units at the same altitude level can fire at each other using the standard rules. Units at different altitudes can fire at each other, but they add one hex to the range for each level of difference. For example, two fighters are 10 hexes apart. One is at Altitude 3 and the other is at Altitude 5. The effective distance between the two units is 12 hexes (10 + [5 – 3]).

Units cannot aim into the area immediately above or below their own hexes.

A difference in altitude creates a "dead zone" around each unit. If the attacker and target are one altitude level apart, the target must be at least two hexes away (the attacker cannot fire at a target in an adjacent hex). If the attacker and target are two altitude levels apart, the target must be three hexes away, and so on. If units are within two altitude levels of each other, use the appropriate column of the Hit Location Table (p. 17) based on the attack direction; otherwise, use the Above/Below column.

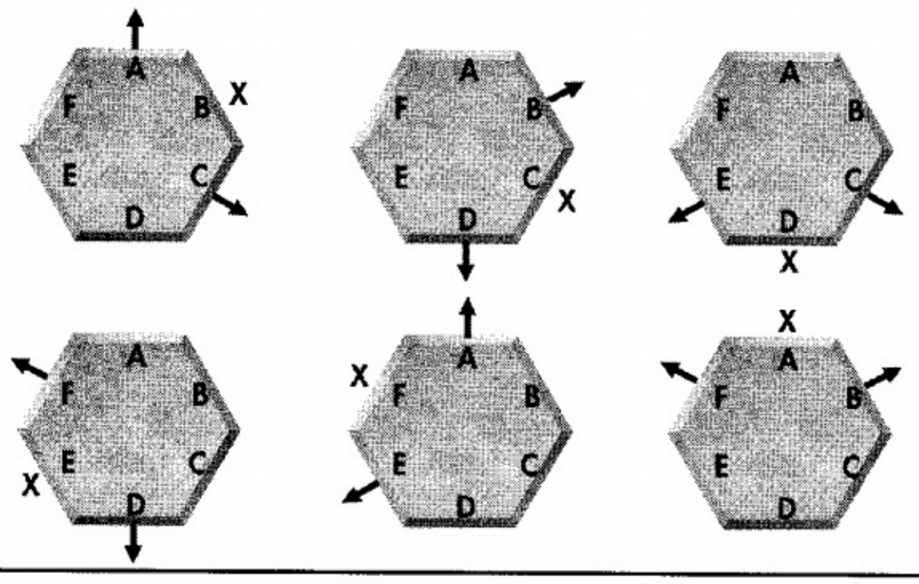
Aircraft flying at NOE rely on their terrain-following radar to hug the ground and constantly "jink" to make use of available terrain as cover. As a result, all units flying at NOE suffer a +2 to-hit modifier when making attacks against air targets. Clan OmniFighters have better integration of their FCS and navigation computers and thus suffer only a +1 to-hit modifier.

Units engaged in ground-attack missions cannot easily dodge incoming attacks. Modify by –3 the target number of all attacks against such units.

OPTIONAL RULES

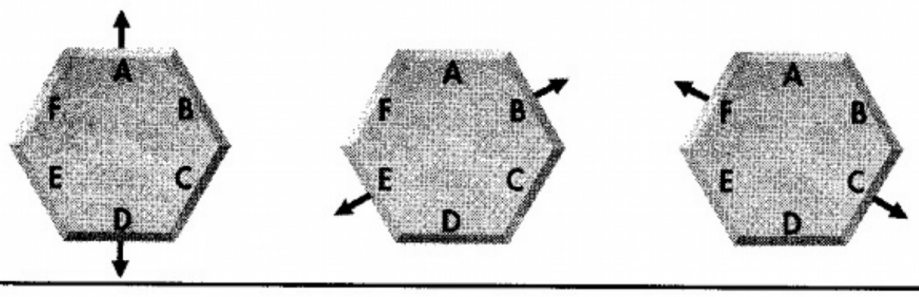
OBLIQUE VECTORS

If both vectors marked with arrows are active, subtract an equal amount from both and add that amount to vector X.



OPPOSING VECTORS

If both vectors marked with arrows are active, subtract an equal amount from both until only one of them is active.



This section provides rules for resolving situations not covered by the basic rules for *AT2*. Players should review the optional rules and agree on those to be included in their game before beginning play.

ADVANCED MOVEMENT

The basic *AeroTech* rules represent a simplification of the mechanics governing movement in space. The advanced movement rules simulate a more realistic version of movement in space, where a craft's heading (direction of movement) may differ from the craft's facing (the direction in which the nose of the craft is pointing). For example, in the advanced movement rules a craft may not decelerate; it must alter its speed and direction by changing facing and applying thrust in a direction that counters its current movement. These rules accommodate a unit flying sideways or even backward, though tracking such maneuvers requires extra recordkeeping.

In the advanced movement system, facing changes do not affect a vessel's heading. The facing affects firing arcs according to the standard rules and determines the vector to which thrust is applied. Units can change their facing by one hexside by spending 1 Thrust Point. A unit can change facing as many times as it has Thrust Points available.

A unit's heading and velocity are determined by a system of vectors. There are six vectors, which correspond to the six sides of each hex, labeled A–F. The A side of each hex is always toward the top of the map, regardless of a unit's facing. A vector is active if thrust is applied while the vessel is facing that hexside. A vector is inactive if the unit spends no Thrust to move through that hexside.

To use this system, each time a unit spends Thrust, record that number on the record sheet in the appropriate vector (the vector of the unit's facing). Next, determine the effect of spending Thrust by consolidating the active vectors.

First, consolidate any active opposing vectors (see Opposing Vectors diagram, p. 33) by subtracting the lowest Thrust value from both vectors, reducing one vector to 0.

Next, consolidate the oblique vectors (see Oblique Vectors diagram, p. 33). Oblique vectors are pairs of vectors that are both adjacent to the same hexside (i.e., F and B; A and C; B and D and so on). When any pair of oblique vectors is active, subtract the lowest of the two Thrust values from both vectors (reducing one vector to 0), and add the same value to the Thrust value of the vector in between. For example, if a unit had an A vector of 4 and an C vector of 2, you would subtract 2 from both values. The C vector would become 0 and thus inactive; the A vector would be reduced to 2, and the B vector between them would be increased by 2.

After consolidating all vectors, a unit should have no more than two active vectors. A unit with more than two active vectors must be consolidated again.

After the player has spent the Thrust planned for the current movement and the active vectors have been consolidated to one or two, the unit completes its movement by moving the number of hexes and direction indicated by each vector. The unit is actually assumed to move in a straight line: if the exact path needs to be determined (for example, to decide whether a collision occurred), lay a straight edge between the center of the origin and destination hexes. If the path passes directly between two hexes, the controlling player chooses which hex the unit moves through.

The Advanced Movement diagram shows the advanced movement system in action. The small arrow in the fighter's hex indicates facing, and the small numbers surrounding its hex show the fighter's vectors.

A fighter begins the turn in Hex A with a Velocity of 5 in vector D and a Velocity of 3 in vector C. If the player spent no Thrust at all, his vessel would move to the position and facing shown in Hex B by moving 5 hexes aft and 3 hexes aft-right. The fighter would not check for a collision with either of the asteroids; the actual path of

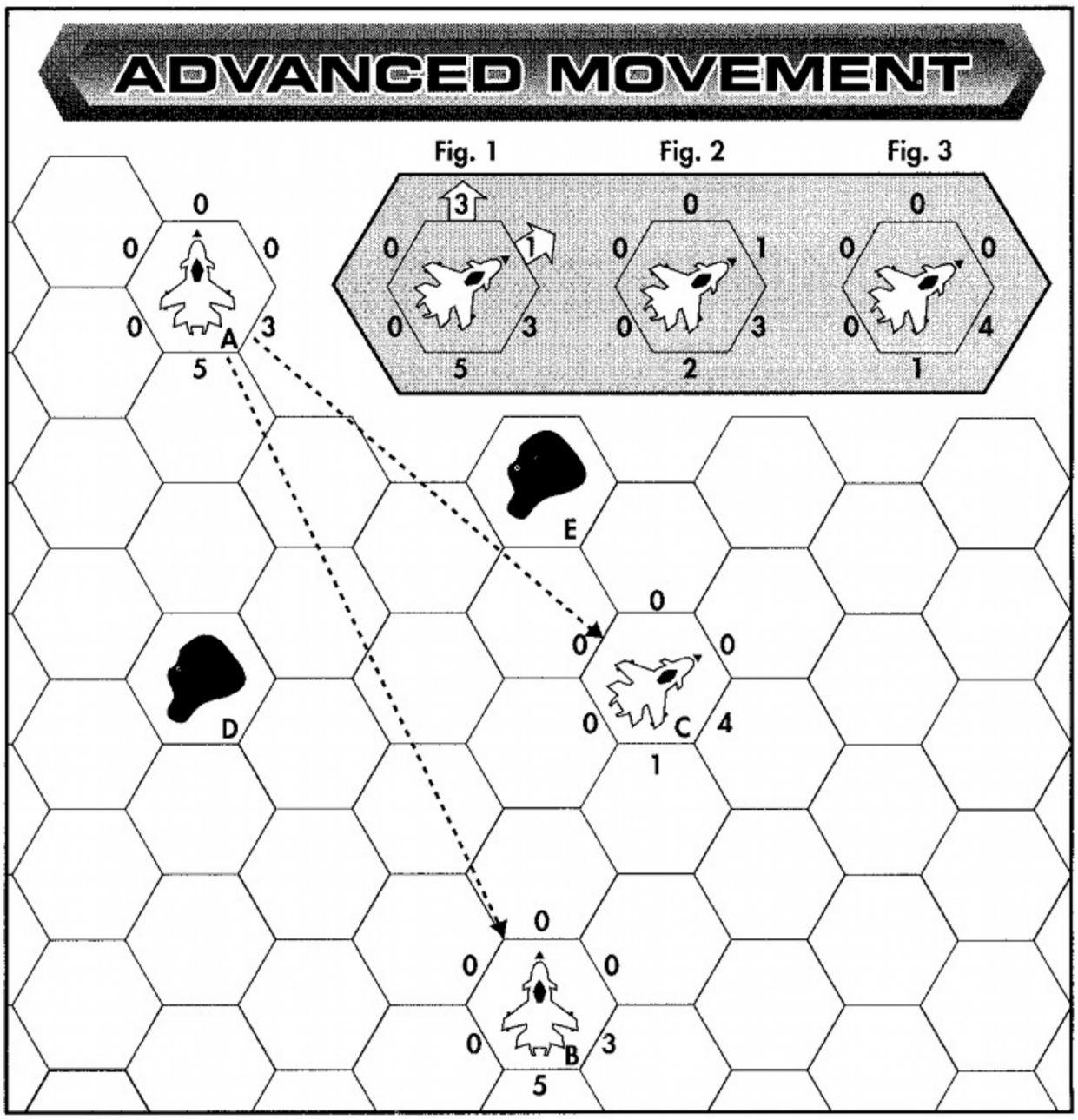
movement is shown by the dotted line.

Rather than leaving the fighter's movement as is, the player spends 3 Thrust Points at its current facing, increasing vector A from 0 to 3. He then spends 1 Thrust to change facing one hexside to the right, and spends 1 Thrust increasing vector B to 1. (Figure 1)

After the thrust expenditure, the vectors are consolidated. First, opposing vectors are consolidated. In this case, there is one pair of opposing active vectors: A and D. The lesser of the two, A, is reduced by 3 to 0, and the opposing vector is reduced by 3 to 2. (Figure 2)

Next the player checks for oblique vectors. There is one pair, D and B. The lesser of the two, B, is reduced by 1 to 0, and D is reduced by 1 to 1. The amount subtracted from each (1) is added to the vector in between, in this case C, increasing it to 4. Because there are no more active opposing or oblique vectors, and there are only two active vectors, the fighter's final vectors are now known. (Figure 3)

After spending 5 Thrust Points on movement as described above, the fighter's final position and facing would be as shown in Hex C. Note that there is no chance of the fighter colliding with the asteroid in Hex E.



ADVANCED INITIATIVE

The advanced Initiative rules determine Initiative on a vessel-by-vessel basis using a Control Roll. This system takes longer than rolling Initiative for each opponent, but it gives better-quality crews an advantage. The unit with the lowest Initiative moves first, followed by the unit with the second lowest, and progressing to the highest Initiative. For ties, units with the lowest MoS move first. If both units possess the same MoS, re-roll the Control Roll. This system eliminates the use of movement subphases.

John's fighter pilot has a Piloting Skill of 4. He rolls 2D6 with a result of 6—a MoS of 2. Adding the fighter modifier of +3, the fighter has an Initiative of 5. Simon's DropShip crew also has a Piloting Skill of 4. His 2D6 roll results in a 9, a MoS of 5. For a DropShip, the modifier is 0. The two units tie. However, because the fighter's MoS was lower than the MoS of the DropShip, John must move first.

ADVANCED INITIATIVE TABLE

Initiative = Control Roll MoS/MoF + Class Modifier

Class Modifiers

Fighter	+3
Small Craft	+0
DropShip	+0
WarShip	–3
JumpShip	–5
Station	–5

ADVANCED POINT DEFENSE WEAPONS

Many large vessels, such as DropShips and larger ships, carry weapons that are too small to use offensively against other ships. Weapons such as machine guns, flamers and small lasers can, however, function in "point defense mode" to target incoming enemy missiles (but not autocannon or Gauss rifle shells; they travel too quickly for the targeting computers to track). Weapons capable of functioning in this way are labeled as Point Defense or AMS in the Class column of the Weapon and Equipment Tables, p. 99. Weapons can only be switched into or out of point defense mode in the End Phase, and cannot be fired normally while in this mode.

A weapon in point defense mode has a range of 1 hex. The weapon defends the hex containing the point defense weapon and one hex in its firing arc. Reduce the effect of enemy missile attacks (SRM, MRM, LRM, ATM) aimed at or passing through defended hexes by an amount equal to half the point-defense weapon's Attack Value. If a missile attack passes along the line

between two arcs, the defending player may choose to use the point-defense weapons in one or both arcs.

Point defense bays can only be used once each turn. The player must declare that he will use point-defense weapons before the to-hit roll is made for the missile attack.

Capital missiles cannot destroyed by point-defense fire, but suffer a +1 to-hit penalty for each point of damage they sustain from passing through a defended hex.

For example, John controls a *Dante*-class WarShip. He switches the appropriate systems into "point defense mode" in the End Phase of the current turn. In the following turn, a 50-point LRM attack is aimed at the frigate. Before the attacker makes his to-hit roll, John declares that he will use the point-defense weapons. The LRM attack passes through the front hex of the WarShip, which contains a 30-point point-defense bay. The point-defense bay reduces the LRM attack by (30 ÷ 2) 15 points.

FIGHTER AMMUNITION EXPENDITURE

All vessels carry a limited amount of ammunition for their ballistic and missile weapons. The *AeroTech 2* rules ignore ammunition restrictions in favor of ease of play. If the game is on a relatively small scale or is part of an ongoing campaign where ammunition must be carefully conserved, players may choose to track ammunition expenditure.

The standard ammunition load (available shots) for an ammunition weapon is listed in the unit's description. Note that, as in *BattleTech*, a single "shot" represents the single use of the weapon, not a single shell or missile. For example, a ton of LRM-20 ammunition contains six shots—120 individual missiles.

When a player fires a weapon that requires ammunition, he should place a tally mark next to the ammunition line for that weapon. When the ammo bay is empty, the weapon cannot be fired for the remainder of the game.

Ultra Autocannon: Ultra-AC weapons use two shots of ammunition every time they are fired. If only one shot remains for an Ultra AC, it is treated as though it were out of ammo.

ASTEROIDS

Some battles will take place in or near asteroid fields. These large rocks can be a boon or a curse in space combat. Most DropShips and JumpShips create an artificial magnetic field to deflect dust or sand-sized particles, and carry a series of small guns (usually lasers or PPCs) used to destroy small pieces of debris. However, all craft must steer around any large obstacles. Before beginning the game, players should agree on what constitutes a large obstacle.

To add an asteroid field to the game, place asteroid counters on the map before play begins. Players should agree on a system for placing the asteroid counters and determine the number of counters to be placed, if that number is not specified in the scenario set-up rules. For purposes of determining the amount of damage an asteroid can withstand (see below), each asteroid should be designated as small, medium or large.

The asteroids may be stationary or mobile. Mobile asteroids may all move in the same direction at the same velocity, or each asteriod can move at a unique heading and velocity. To give each asteroid a unique movement, roll 1D6 for velocity and 1D6 for direction using the Dive-Bombing Scatter Diagram (p. 26). If an asteroid moves off the map edge or enters a space-atmosphere interface hex, it is removed from play. If the players want to keep the map crowded with asteroids, each one that moves off the map can be replaced by a new asteroid that enters the map from the opposite map edge in the following turn.

A unit may fly through or end its movement in a hex occupied by an asteroid, but risks colliding with the asteroid. When a unit enters an asteroid hex, or an asteroid enters the same hex as a unit, make a Control Roll against a target number equal to Piloting Skill +2, modified for critical damage or thrust. A successful roll means the unit and asteroid miss each other.

On a failed roll, the unit and the asteroid collide. The unit sustains a number of points of capital-scale damage equal to 1D6 x Margin of Failure. Regardless of whether the unit moved into the asteroid hex or the asteroid moved into the unit's hex, the damage is applied to the facing of the unit corresponding to the hexside through which the unit or asteroid entered the target hex.

Asteroids suffer 1 point of damage for every 10,000 tons of the colliding unit's mass (round down). For example, if an *Aegis* cruiser collides with an asteroid, the asteroid sustains 74 points of damage (745,000 tons ÷ 10,000, rounded down). Naval weapon fire can also damage or destroy an asteroid. Each general size of asteroid can sustain different amounts of damage before being destroyed. The players should agree on the number of capital-scale points each size asteroid can withstand in the current game, but we suggest that small asteroids may sustain no more than 200 points of damage; medium-sized asteroids, 600 points of damage; and large asteroids, 1,200 points of damage before being destroyed. If two or more asteroids end their movement in the same hex, they collide. If one is smaller than the other (or has more damage points), the smaller asteroid is destroyed. If the asteroids are the same size, determine the survivor randomly. Surviving asteroids take no damage and continue moving in the same direction and heading as before the impact.

A hex occupied by an asteroid blocks line of sight.

ATTACKING THE JUMP SAIL

The bloody fighting of the early Succession Wars took a terrible toll on the JumpShip fleets of the Inner Sphere. As the wars progressed, the Successor States came to an unspoken agreement that placed JumpShips off-limits for attacks. In most cases, JumpShip crews surrendered their ships rather than risk damage. For those who chose to resist or flee, the most efficient way to stop them was to attack their massive energy-collecting sail.

If an attacker fires at a deployed sail, modify the to-hit number by –4 to reflect the vast surface area of the sail. The material of the sail is ultra-thin and extremely fragile, however, and so even the most powerful attack simply tears a small hole in the sail. As a result, each successful hit on the sail reduces its integrity by 1 point, regardless of the damage potential of the attack.

DEBRIS

Except for the following rule, debris uses the asteroid rules. Debris from DropShips is treated as a small asteroid. Debris from JumpShips or larger vessels is treated as a medium asteroid. When a DropShip, JumpShip or WarShip is destroyed, replace the unit with a debris counter.

The debris has the same velocity and heading as the destroyed unit. For attacks that trace line of sight through a hex containing a debris counter, modify the to-hit number by +1. Apply this modifier for each debris counter through which line of sight passes.

DOCKING

Two vessels can attempt to dock, linking airlocks or docking adapters. A docking attempt normally takes about 30 minutes (30 turns). This time can be increase as a result of docking collar damage, or voluntarily to increase the likelihood of a safe docking. A ship can dock in less time, to a minimum of 5 minutes, but such reductions will increase the difficulty, per the Docking Modifiers Table.

Ships attempting to dock must be in the same space hex, and moving at the same heading and velocity for the length of the maneuver. At the end of the time allocated for the docking maneuver, make a Control Roll, with the modifiers shown on the Docking Modifiers Table. A successful result indicates a successful docking. Failure indicates a mishap. The Docking Damage Table lists the effects of the mishap based on the Margin of Failure (MoF).

Undocking requires no special rolls or rules. However, a unit undocking from an out-of-control unit must make a Control Roll to avoid going out-of-control itself.

A DropShip docked with a JumpShip, WarShip or space station can continue to fire at attacking units. Any docked DropShip occupies the same hex as the transporting vessel and has the same orientation, i.e. its nose points the same way as that of the JumpShip or WarShip. However, the proximity of the transport or station prevents the use of any weapons that fire directly aft. Attacks directed against a JumpShip or WarShip with docked DropShips (or a space station with docked vessels) can, on a 1D6 result of 1, strike a docked unit. If the JumpShip or station has more than one docked unit, randomly determine the unit struck. Use the standard rules to determine the damaged side.

DOCKING MODIFIERS TABLE

Condition	Modifier
Unit has critical damage to thruster	+1/box
Docking conducted during combat*	+2
Docking unit is JumpShip	+4
Docking unit is WarShip	+3
Docking unit is DropShip over 20,000 tons	+2
Docking unit is DropShip under 5,000 tons	–1
Per 15 minutes added to docking time	–1
Per 5 minutes subtracted from docking time	+1
Sensor damage	+1/box
Avionics damage	+1/box
Trained docking pilot used**	–2
Docking collar damaged	Double docking time

* This modifier applies to any docking attempts made within 10 hexes of units firing or being fired upon during the docking procedure.

** See *Piloting (Expanded)*, p. 55.

DOCKING DAMAGE TABLE

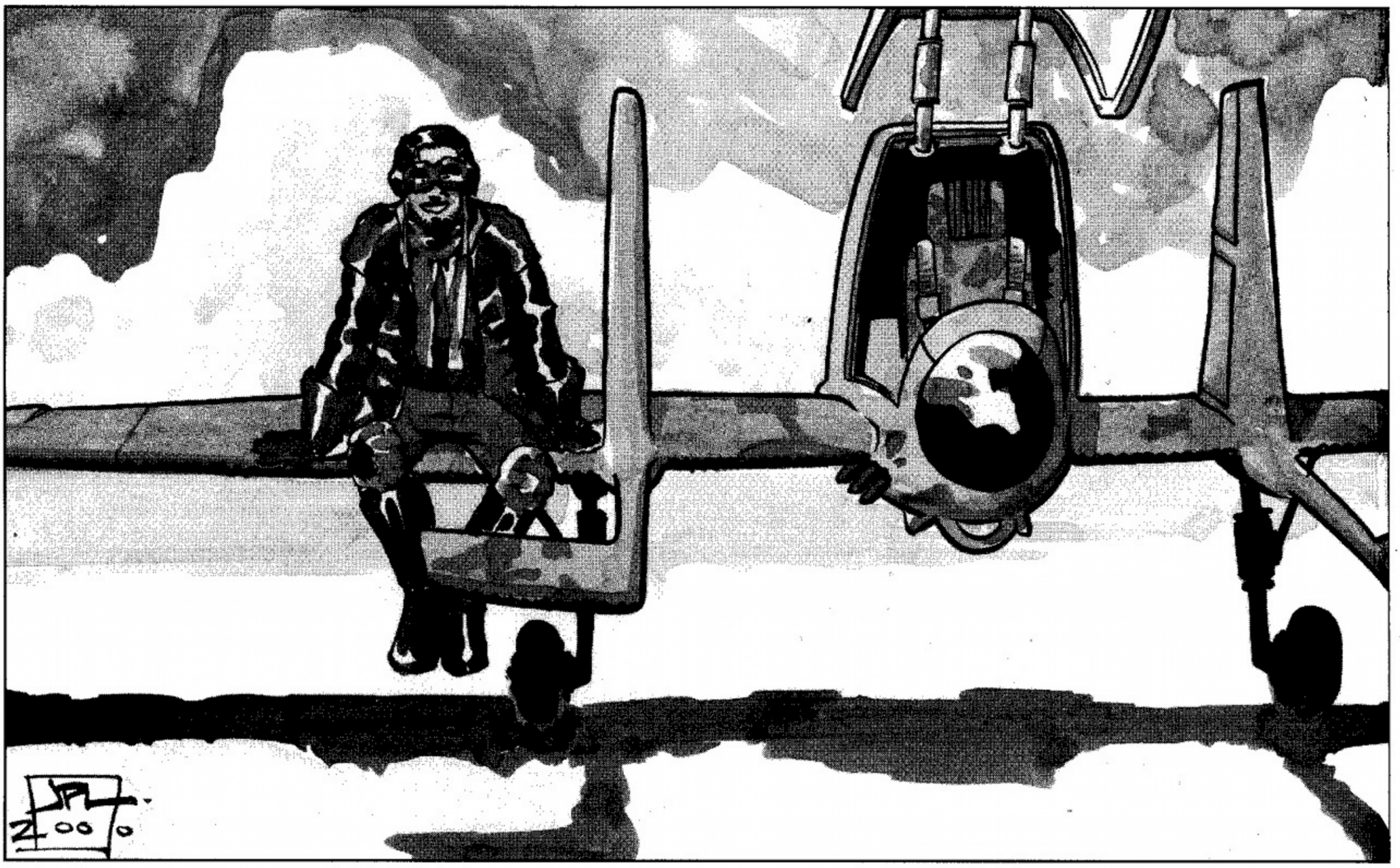
Margin of Failure	Effect
0	Docking successful.
1	Docking successful. Both docking collars take 1 box of damage.
2	Docking unsuccessful. The craft miss each other, but the pilot can attempt another docking after 10 minutes.
3	Docking unsuccessful. Both docking collars suffer damage, cross off 1 box. The pilot can attempt another docking after a delay of 10 minutes.
4+	Docking unsuccessful. Apply conventional damage equal to the (MoF – 3) x 10 to the nose of the docking unit and the side (JumpShip/WarShip) or nose (DropShip) of the target unit. The pilot can attempt another docking after 10 minutes.

DROPPING 'MECHS AND BATTLE ARMOR

BattleMechs and battle armor can exit a DropShip under three conditions: on the ground, at high altitude, or in space. Units that exit a DropShip at high altitude descend under the influence of gravity, falling 1 hex per turn (three altitude levels per turn if using the *Atmospheric Combat* rules, p. 28). Jump-capable BattleMechs and battle armor suits can use their thrusters to control their descent. Units without jump jets mount special disposable thruster packs that allow them to control their descent and land safely.

Fighters or DropShips can attack a descending 'Mech or battle armor unit. All standard combat rules apply. Divide this damage into 5-point groups and apply it using the *BattleTech* rules. Apply damage to a BattleMech to its back.

Upon reaching the ground hex that represents the *BattleTech* map, the player controlling the dropping unit should nominate a hex on the *BattleTech* map(s) on which to land. Use the rules on pp. 72–73 of *BMR* to determine whether a unit lands successfully.



BattleMechs and battle armor units that exit a DropShip in space are encased in special ceramic cocoons to protect them during re-entry (an entire point/squad of battle armor is contained in a single cocoon). Unpowered, a cocoon will fall toward the planet's surface at 1 hex per turn. The controlling player should make a re-entry roll for each cocoon as it reaches the space/atmosphere interface, modifying the roll by +4 to reflect the cocoon's inability to maneuver. If it survives re-entry, the unit will jettison the cocoon and fall toward the planet's surface as described above.

A descending cocoon can sustain 100 standard-scale points of damage before being destroyed. If the cocoon suffers damage but is not destroyed, modify the reentry roll by +1 for every full 10 points of damage it sustains.

FIGHTER SQUADRONS

Though many battles involve only a handful of fighters, wars involving DropShips and WarShips can include hundreds of the smaller crafts. It would be impractical to manage such large numbers of individual fighters using the standard rules, so the following abstract rules are provided. The goal of these rules is to group the fighters into units and use each unit as a distinct entity.

Determine the aircraft to be used in each unit. All fighters in a unit need not be the same type, though they often are. To determine the unit's capital-scale Armor Value, for each facing add the armor values for all fighters in a unit, then divide the total by 10 and round down, to a minimum value of 1.

Next, group all identical weapons in each firing arc, as though they were large-craft weapon bays (see *Weapons, Ammunition and Other Equipment*, p. 46). One to-hit roll is made per "bay," and if the roll succeeds, all weapons in the bay hit. If it fails, all weapons miss. For example, a squadron of six fighters has two PPCs, six ER large lasers and ten medium lasers. One roll is made for the two PPCs, another for the large lasers, and a third for the medium lasers.

Fighter units total their heat sinks and can fire a number of weapons whose total heat value is less than or equal to their total number of heat sinks. For simplicity, fighter units use the same heat rules as large craft. Add together the total heat for all bays in a firing arc. If any bay in the arc is fired, the full heat value of the arc should be assessed against the unit's ability to dissipate heat. Fighter units cannot overheat (generate more heat than they can dissipate).

Fighter units use the Safe Thrust value of their slowest member. Thus, if a unit comprises four 7/11 fighters and one 4/6, the unit moves as a 4/6.

Fighter units sustain damage in the same manner as single craft, with the following exceptions:

- Fighter units do not suffer critical damage.

• Each unit armor box is at the "naval" scale; cross off one box for every 10 full points of conventional damage.

• Fighter units remain operational until all the armor boxes of one facing are crossed off. Any additional damage to that facing destroys the unit.

The player controlling a fighter unit can choose to break it out into its constituent fighters and use the standard *AeroTech 2* rules. If the unit is undamaged, the fighters use their normal *AeroTech* statistics. If the unit has sustained damage, multiply the number of boxes of damage on each armor facing by 10, and divide this damage equally between the fighters that comprise the unit. For each armor facing that has lost 50 percent or more of its armor, one randomly determined fighter in the unit is destroyed.

A unit of six fighters has suffered 12 points of damage on the nose. When the units are converted back to the standard AeroTech *scale, this becomes 120 points. If each armor facing has at least half of its starting armor, each individual fighter suffers 20 points of damage on the nose (120 ÷ 6). However, if two facings sustained a greater than 50 percent armor loss, only four fighters would remain active, and each of the remaining units would suffer 30 points of damage on the nose (120 ÷ 4).*

FUEL CONSUMPTION

Players can choose to account for fuel consumption in advanced games. Tactical Fuel Efficiency is used during combat, and Strategic Fuel Efficiency is used at all other times. Both values are calculated at the start of the game (see *Construction,* p. 42 for determining these stats for player-generated ships).

Fuel Critical Hits: A critical hit to the fuel tank does not result in an explosion if the unit is out of fuel.

TACTICAL FUEL EFFICIENCY

The number of Fuel Points available to each unit depends on its class and the number of tons dedicated to fuel tanks. To determine the number of points available, multiply the fuel tank tonnage by the modifier listed in the Fuel Point Table, p. 45, *Construction.* For each Thrust Point used during an *AeroTech 2* game, 1 point of fuel is consumed.

STRATEGIC FUEL EFFICIENCY

Vessels crossing a planetary system use fuel more efficiently than when they are in combat. The amount of fuel used in traveling is expressed in Burn Days. One Burn Day is equal to the number of tons of fuel used per day if traveling at 1 G of acceleration. To determine the amount of fuel used during transit, multiply the Burn Day value by the number of days of travel and by the G-rating. For example, a vessel with a Burn Day value of 1.84 spends three days crossing a system at 2 Gs. This uses up 11.04 tons of fuel (1.84 x 3 x 2).

The Burn Day value of each vessel varies by ship class and whether the vessel is civilian or military. Fighters cannot travel through a planetary system.

HYPERSPACE TRAVEL

JumpShips and WarShips can travel through hyperspace by means of the Kearny-Fuchida jump drive. Such drives allow the vessels to cross up to thirty light years almost instantaneously, but they require massive amounts of energy.

MAKING A JUMP

In *AeroTech 2,* all jump-capable vessels are assumed to *not* have a jump route calculated unless the scenario instructions state otherwise. To calculate a jump route, see *Using MW3 Characters,* p. 56.

In the Initiative Phase, JumpShips or WarShips which have coordinates plotted and which have not moved during the scenario can declare they are making a hyperspace jump. The vessel jumps in the End Phase of the following turn. The JumpShip or WarShip is then removed from the mapsheet and cannot re-enter the battle.

DAMAGE TO NEARBY UNITS

Opening a hole into hyperspace places great stress on nearby objects. Any unit in the same hex as a jumping vessel or an adjacent hex must make a Control Roll. A successful result means the unit avoids damage. Failure indicates the unit suffers (MoF x 2D6) points of capital-scale damage to each armor facing.

If there are any jump-capable vessels in the same hex as a jumping vessel or adjacent hexes, their drive coils interfere with the jump process and the damage effect is potentially more severe. If the Control Roll is successful, the jump is aborted. If the roll fails, the jumping unit and all jump-capable units within a one-hex radius suffer an automatic critical hit to their K-F drives. They take (MoF x 12D6) damage to their Structural Integrity.

LANDING AND LIFTOFF

In the standard rules, aerospace units are assumed to start play in the air or in space, and stay there for the duration of the game. The following rules allow for craft to land or lift off during game play.

LANDING

Any units entering a ground hex in a space-based *AT2* game, or entering a hex at the same altitude as the underlying terrain in an atmospheric game, can attempt to land on any available ground space on the *BattleTech* maps. There are two types of landing: vertical and horizontal.

Vertical landings require the least amount of space, but require more fuel and cause significant damage to the ground. All spheroid DropShips and wingless small craft must land vertically. Aerodyne DropShips attempting to land on an airless world can make vertical landings. Craft making vertical landings reduce by half the terrain modifiers on the Landing Modifiers Table, p. 38. A craft landing vertically will use one ton of fuel hovering over the landing site. If the hex in which the craft lands is not an airfield, water, a road, or a concrete surface, the landing hex and the six adjacent hexes will become a Depth 1 crater.

Fighters, aerodyne DropShips and winged small craft can

FAILED BRAKING MANEUVER TABLE

Margin of Failure	Effect
1–4	Landing requires full distance. The pilot can attempt to land normally or abort the landing, circle, and try again in a subsequent turn.
5	The vessel must land. However, the DropShip becomes harder to control, adding 1 to the landing Control Roll target number.
6+	The vessel must land and requires 600 meters of runway to do so. The vessel will suffer 2 points of damage on the nose, and the landing gear is destroyed. Add 2 to the landing Control Roll target number.

LANDING MODIFIERS TABLE

Condition	Modifier
Craft has damaged thrusters	+4
Craft is out-of-control	Automatic failure (assume MoF of 10)
Unit is attempting vertical landing	+1 per point of velocity above 1
Unit is attempting horizontal landing	+1 per point of velocity above 3
Landing gear damaged	+3 per box crossed
Nose armor destroyed	+2
Craft reduced to 50% or less of starting thrust	+2
No thrust available (aerodyne craft)	+4
No thrust available (spheroid DropShip)*	+8
Runway too short for craft	+2
*Terrain Modifiers***	
Craft landing at manned, friendly airfield	–2
Craft landing at unmanned, friendly airfield	–1
Craft landing on road or paved surface	0
Craft landing at unfriendly airfield	+1
Craft landing in open hex	+2
Craft landing in water or swamp	+3
Craft landing in rough or rubble hex	+3
Craft landing in elevated/building hex	+3
Craft landing in light woods	+4
Craft landing in heavy woods	+5

* Only applies if spheroid craft lost thrust this turn, otherwise the craft falls and is destroyed per *Atmospheric Combat*, p. 28.

** Determine all appropriate modifiers based on the hexes of the landing area, then apply only the least advantageous. These modifiers are halved for vertical landings.

VERTICAL LIFTOFF MODIFIERS TABLE

Condition	Modifier
Landing gear damaged	+1
Maneuvering thrusters damaged	+3
Craft lifting off from a crater	+3
Craft lifting off from an airfield or landing pad	–1

make horizontal landings. To make such a landing, a DropShip requires 600 meters (20 *BattleTech* hexes) of long, flat surface. Fighters and shuttlecraft can land in 300 meters (10 *BattleTech* hexes). The pilot can attempt to reduce the landing distance by up to half the base distance by tilting up the nose of the craft, cutting the aft drive and using the bottom-mounted drive to provide braking thrust. To accomplish this maneuver, the pilot must make a Control Roll with a +4 modifier. For every point by which the roll succeeds, reduce the required landing distance by 30 meters (1 *BattleTech* hex), to a minimum of half the standard landing distance. If the roll fails, consult the Failed Braking Maneuver Table.

For every landing attempt, the pilot must make a Control Roll to determine the success of the landing, applying modifiers for critical damage and failed braking maneuvers if necessary, and any appropriate modifiers from the Landing Modifiers Table.

If the landing Control Roll is successful, the craft touches down safely. If the roll fails, the unit suffers 10 points of standard-scale damage on the nose per point of MoF.

LIFTOFF

Aerodyne DropShips, fighters and shuttles can lift off by accelerating along a runway or open ground until reaching liftoff velocity. The distance required for all craft is 600 meters. Aerodyne DropShips and small craft can use their bottom-mounted transit drives to provide enough lift for takeoff. There is no need to make a piloting roll for a horizontal liftoff. A craft cannot

FAILED LIFTOFF TABLE

Margin of Failure	Effect
1–2	Vessel lifts off, but uses an additional 1 ton of fuel.
3–4	Landing gear damaged (cross off 1 box). The pilot must make an additional Control Roll with no modifiers. If the roll is successful, the craft has lifted off. If the roll fails, the craft falls back to the ground, suffering 20 points of damage on the aft side.
5	The landing gear is destroyed and the craft strikes the ground, causing 50 points of damage to the aft side.
6+	The landing gear is destroyed and the craft strikes the ground, causing 100 points of damage to the aft side. The craft cannot attempt another liftoff until repairs are completed.

lift off if it has a Safe Thrust of 2 or less.

If using the optional *Fuel Consumption* rules (p. 37), each liftoff attempt consumes 1 ton of fuel.

Spheroid DropShips must lift off vertically. A vertical liftoff requires a Piloting Roll, with modifiers as shown on the Vertical Liftoff Modifiers Table.

If the roll succeeds, place the unit in the appropriate ground hex on the *AeroTech* atmospheric map. If the roll fails, calculate the Margin of Failure (MoF) and refer to the Failed Liftoff Table.

LAUNCHING/RECOVERING SMALL CRAFT

Small craft, fighters and shuttles land on a launch-and-recovery bay within a carrier. Two small craft can exit a bay door each game turn. Small craft cannot launch from a unit that is considered out-of-control, or a unit operating in atmosphere at a velocity higher than 2.

Each operational door allows two small craft per minute to land in a launching/landing bay.

To be recovered, a small craft must end its turn in the same hex as the transport unit, with the same heading and velocity. Make a Control Roll for each individual shuttle or fighter in the turn of recovery. If the transport unit spends Thrust Points during the recovery maneuver, increase the target number by +5. The unit lands successfully if the Control Roll succeeds. If the result is less than the target number, the landing fails. Apply 2 points of standard-scale damage to the craft for each point of Margin of Failure.

ORBIT-TO-SURFACE FIRE

A WarShip can fire its capital weapon bays at surface targets (commonly referred to as orbital bombardment or naval fire support), but may not attack units in space in the same turn. The target ground hex must be within the firing arc of the bay used, and must be in range (allowing for range increases for firing through atmosphere hexes; see p. 21). The attacker nominates a hex on the *BattleTech* map as the target for each weapon bay. The attack from each bay is targeted and resolved separately.

Each orbit-to-surface attack is resolved using the *Artillery* rules found on pages 68–72 of *BMR*, with the following additions and exceptions.

- The damage value of each attack is the Attack Value of each bay.
- Apply the normal modifiers for CIC or sensor damage to the base to-hit number.
- Missed shots scatter 1D6 hexes x the Margin of Failure of the attack roll.
- Naval laser and naval PPC shots arrive in the same turn they were fired.
- Naval autocannon and naval Gauss shots arrive on the turn after they were fired.
- Capital missile and standard-scale weapons cannot be used for orbit-to-surface attacks.
- Naval fire support attacks cannot be pre-plotted.

Orbital bombardment damages targets over a large area, even if the intended target hex is missed. At the impact hex, the damage inflicted is equal to the bay's Attack Value multiplied by 10 (i.e. converted to standard scale). For each hex away from the impact, reduce the multiplier by 2; adjacent hexes suffer Attack Value x 8, and so on. Units more than 4 hexes away from the impact hex will suffer no damage.

A target in the impact hex will take damage as if it was punched in the back. Determine attack direction to any units in the rest of the blast area as if the attack originated in the impact hex. Woods and buildings provide no protection against the damage, but if a hill higher than both the impact hex and target unit intervenes, that target unit takes no damage.

REPAIR

Repair in *AeroTech 2* uses the rules on pp. 82–88, *BMR,* with the following modifications. Use the AeroTech 2 Repair Table (p. 40) in place of the Master Repair Table.

DIAGNOSIS

A vessel is only "truly destroyed" if it is destroyed by a critical hit, collision with an asteroid, or it burns up on re-entry. If it is "destroyed" in any other way, the vessel's remaining parts might be salvageable.

Component Status

Weapons and other equipment that have been rendered inoperative might have been damaged beyond repair. For each "destroyed" weapon, roll 2D6. On a result of 10 or more, the weapon can be repaired; otherwise, it must be replaced.

Equipment that can sustain more than one box of damage

AEROTECH 2 REPAIR TABLE

Damage	Target Number Modifier	Partial Repair	Partial Repair Effect	Base Time
Replacements				
Avionics	+2	2	+1 control penalty	80 hours
Bay Door	0	—	—	10 hours
Cargo Bay*	–2	—	—	1 month
CIC/FCS*	+1	1	+1 to-hit penalty	72 hours
Docking Collar*	–1	—	—	48 hours
Grav Deck*	+4	—	—	10 days
K-F Boom	–1	—	—	60 hours
K-F Drive*	+3	—	—	2 months
Engine*	+2	—	—	3 months
Fuel Tank (Fighter)	–1	—	—	30 hours
Fuel Tank (Large craft)*	+1	—	—	2 months
Landing Gear*	+3	3	+1 Control Roll penalty when landing	20 hours
Heat Sink	–1	—	—	90 minutes
Life Support*	+1	—	—	2 weeks
Sensors	–1	1	+1 to-hit penalty	20 hours
Thruster	–1	—	—	10 hours
Weapons	–1	1	+1 to-hit penalty	30 hours
Repair				
Avionics	0	2	+1 control penalty	8 hours
Bay Door	–2	—	—	1 hour
Cargo	2	—	—	4 hours
CIC/FCS	+1	1	+1 to-hit penalty	2 hours
Docking Collar	+4	2	+2 penalty to docking attempts	2 hours
Grav Deck	+3	—	—	24 hours
K-F Boom	–1	—	—	6 hours
K-F Drive	+6	—	—	10 days
Engine	+2	2	Reduce Safe Thrust by 1	5 hours
Fuel Tank (Fighter)	–3	1	Reduce Max. Fuel Points by 10 percent	3 hours
Fuel Tank (Large craft)	+1	2	Reduce Max. Fuel Points by 10 percent	6 hours
Landing Gear	+3	3	+2 Control Roll penalty when landing	2 hours
Heat Sink	–1	—	—	90 minutes
Life Support	+1	—	—	2 hours
Sensors	–1	1	+1 to-hit penalty	2 hours
Thruster	–1	—	—	90 minutes
Weapons	–1	1	+1 to-hit penalty	3 hours

* Indicates repair only possible in a repair bay or on a planetary surface (for vessels that can land).

before being destroyed and has at least 1 point remaining can always be repaired.

Armor and SI

Armor and SI boxes that have been crossed out cannot be repaired; they must be replaced.

SCREEN LAUNCHERS

Screen launchers use an explosive obscurant to make it more difficult for enemy units to target the screen-equipped vessel. Designed to detonate and scatter particle obscurants, chaff and electronic noisemakers, screen launchers only function in space.

A screen launcher may be installed on any Inner Sphere vessel of DropShip size or larger. Like any weapon, it must be assigned to a specific firing arc and counts against that arc's weapon limits. A single launcher can fire one canister per turn, and each canister may be targeted on any hex in the appropriate firing arc and within range. No to-hit roll is required. Once the canister is detonated, place a screen counter in the target hex.

Any unit in the target hex at the time of detonation suffers 15 points of standard-scale damage, rolled on the nose column of the Hit Location Table, p. 17. In subsequent turns, units may enter the screen hex without taking damage.

Hexes containing a screen counter block line of sight, though units can fire into or out of a hex containing a screen. Modify the to-hit number by +2 for attacks into or out of a hex containing a screen.

In the End Phase of each turn, roll 2D6 for each screen counter on the map. On a result of 7+, remove that screen counter. On any other result, the screen counter remains.

SURFACE-TO-ORBIT FIRE

Capital-scale lasers and particle projection cannons can be mounted in ground facilities and used against vessels in orbit. Such facilities are known as SDS (Space Defense System) bases, and are quite rare. They operate using the standard capital-scale weapons rules, but they have a fixed firing arc, which is shaped like a broadside arc but fires straight up through the atmosphere (see the Atmospheric Operations Diagram, p. 10, *Movement*). Use the weapon's standard range, adjusting for firing through atmospheric hexes.

TELEOPERATED MISSILES

The standard versions of the Killer Whale, White Shark and Barracuda missiles are computer-controlled to home in on a target designated at the start of the turn. If they miss their intended target on the first pass, they simply head off into space. To make better use of such missiles, teleoperated versions have been developed, each piloted remotely and thus able to be steered. These can make multiple passes against a target until their fuel runs out.

There are four types of teleoperated missile. Each type carries a different fuel load and different warhead. Such weapons are designated by the -T suffix, and though technically capital-grade weapons, they can be mounted on DropShips. They only can be used in space.

Whenever a teleoperated missile is launched, place a counter representing the missile in the attacker's hex, with the same heading and velocity as the firing unit.

Teleoperated missiles move as if they were fighters, but move after DropShips (and before fighters). Use the standard rules for turning and acceleration, but teleoperated missiles have no G or SI movement restrictions.

Missiles cannot decelerate, but also do not have a maximum Thrust Value. Thrust is limited only by the amount of fuel available. For example, a missile with 30 Fuel Points can spend up to 30 Thrust Points. If the missile spends all of its Fuel Points, it can no longer maneuver or accelerate. The teleoperated missiles currently available have the following number of Fuel Points: Kraken-T, 25; White Shark-T, 40; Killer Whale-T, 30; Barracuda-T, 30.

A clear line of sight must be maintained between the firing vessel and the missile to facilitate the transmission of control data. All objects that block LOS or inflict to-hit penalties prevent the operator's commands from reaching the missile. Consequently, missiles without LOS to the operator may not maneuver or accelerate. Instead, the missile will continue on its last heading and velocity. Likewise, if the firing unit is destroyed, the missile cannot be controlled and continues on its last heading and velocity.

Teleoperated missiles cannot attack fighters. However, they are regarded as fighters when being attacked. The "armor value" of a teleoperated missile is equal to the amount of damage it may inflict. Missiles are not destroyed until their "armor" is destroyed.

If a missile ends the Movement Phase in the same hex as an enemy unit—even if it is currently out of LOS of the operator—the missile's targeting computer assumes control and attempts to hit the "target" vessel. Teleoperated missiles use a Base To-Hit Number of 2. Modify this by +1 for each point of damage taken by the missile, and for each point of thrust spent during the turn in which it attacks. A missile with no Fuel Points suffers an additional +6 to-hit modifier. If the firing unit has suffered critical hits that affect to-hit numbers (such as FCS and CIC), these modifiers also affect this to-hit number.

A missile that misses its target remains on the map and can continue to maneuver until it hits a target, runs out of fuel, is destroyed, or leaves the map.

CONSTRUCTION

The following system allows players to design their own aerospace fighters, DropShips, JumpShips and WarShips. These construction rules are different from previous systems. With the exception of fighters, all previously published aerospace units are still "official" and legal for game play. Updated *AeroTech 2* statistics for previously published fighters appear in the appendix, beginning on p. 81.

OVERVIEW

To design a craft, the player will need the appropriate weapon charts and a calculator for the larger vessels. Fractions should be rounded up to the nearest half-ton. Construction takes place using the following steps.

1. Determine technology base
2. Determine vessel class
3. Choose hull size
4. Install engines
5. Select Structural Integrity
6. Add control components
7. Add other equipment (in any order)
   - Determine fuel capacity and efficiency
   - Allocate armor
   - Add weapons, ammunition and other equipment
8. Add heat sinks, crew quarters and cargo
9. Complete record sheet

1. DETERMINE TECHNOLOGY BASE

AeroTech 2 units can be constructed using Inner Sphere technology or Clan technology. This choice governs what equipment can be installed in a craft.

Doug has a concept for a new Inner Sphere aerospace fighter. Built in the Lyran Alliance, this heavy fighter will have lots of armor, and he also wants it to be able to carry a large bomb load.

2. DETERMINE VESSEL CLASS

AeroTech 2 units belong to one of the seven classes shown on the Vessel Class Table, p. 42. DropShips must be designated as either civilian or military.

Small craft are treated as civilian DropShips for the construction process, unless noted otherwise. Small craft can be either spheroid or aerodyne.

3. CHOOSE HULL SIZE

Each vessel must have a mass within the range indicated on the Vessel Class Table. Each craft must be built using the appropriate mass increments; in other words, a fighter's mass must increase in multiples of 5, a DropShip's mass must increase in multiples of 100 and so on.

Aerospace fighters may mass between 10–100 tons, and increase in increments of 5 tons. Doug wants his fighter to carry a large weapon payload, and so chooses a mass of 95 tons.

4. INSTALL ENGINES

Choose the Safe Thrust of the unit. The higher the Safe Thrust rating, the larger the engine. Calculate Maximum Thrust by multiplying the Safe Thrust by 1.5 (round up).

FIGHTERS/SMALL CRAFT

The first step in installing an engine in a fighter is to determine its Engine Rating, which has a maximum of 400.

Aerospace Fighter Engine Rating = Aircraft Tonnage x (Safe Thrust – 2)

Conventional Fighter Engine Rating = Aircraft Tonnage x Safe Thrust

To find the mass of an aerospace fighter's engine, cross-reference the Engine Rating with the Fusion Engine Table (p. 111, *BMR*). Aerospace fighters can also use XL engines.

Conventional fighters may use a fusion engine or a turbine. For conventional fighters, fusion engines weigh 1.5 x the mass

VESSEL CLASS TABLE

Class	Potential Mass (in tons)	Mass Increment	Notes
Conventional Fighter	10–50	5	Atmospheric-only fighter
Aerospace Fighter	10–100	5	Atmospheric and space fighter
Small craft	100–200	5	Landing, shuttle or escape craft
Aerodyne DropShip	200–35,000	100	Aerodynamic interplanetary craft
Spheroid DropShip	200–100,000	100	Non-aerodynamic interplanetary craft
JumpShip	50,000–500,000	1,000	Non-combatant interstellar craft equipped with K-F drive
WarShip	100,000–2,500,000	10,000	Combatant interstellar craft equipped with compact K-F drive
Space s tation	2,000–2,500,000	500	Immobile orbital facility

CONSTRUCTION

LARGE CRAFT ENGINE TABLE

Class	Engine Mass (Percentage of Total Mass per Thrust Point)
Inner Sphere DropShip	6.5
Clan DropShip	6.1
WarShip	6
JumpShip/Station	1.2 (fixed)

K-F DRIVE INTEGRITY

Drive Type	Integrity
Standard	1.2 + (K-F drive mass ÷ 60,000)
Compact	2 + (K-F drive mass ÷ 25,000)

JUMP SAIL TABLE

Drive Type	Sail Mass
Standard	30 + (JumpShip mass ÷ 7,500)
Compact	30 + (WarShip mass ÷ 20,000)

Sail Integrity = 1 + (Sail Mass ÷ 20)

STRUCTURAL INTEGRITY TABLE

Class	SI Mass
Fighter	None
Aerodyne DropShip or Small craft	(SI x vessel mass) ÷ 200
Spheroid DropShip or Small craft	(SI x vessel mass) ÷ 500
JumpShip	Vessel mass ÷ 150
WarShip	SI x (vessel mass ÷ 1,000)
Space station	Vessel mass ÷ 100

CONTROL COMPONENTS TABLE

Class	Control Mass (percent of total tonnage)
Aerospace fighter	3 tons (fixed)
Conventional fighter	10
DropShip or Small craft	.75
JumpShip or WarShip	.25
Space station	.1

indicated in the Fusion Engine Table (shielding adds 50 percent to the mass). Turbine engines weigh twice the mass indicated in the Fusion Engine Table. Conventional aircraft cannot use XL engines.

DROPSHIPS/LARGE CRAFT

To determine the engine mass of large craft, multiply the Safe Thrust rating by the appropriate value for the class as shown on the Large Craft Engine Table. The result is the percentage of the vessel's total mass devoted to engines. For example, an Inner Sphere DropShip with a Safe Thrust of 3 would need to devote 19.5 percent of its total mass (6.5 x 3 =19.5) to engines. If the DropShip massed 10,000 tons, the engines would mass 1,950 tons (10,000 x 0.195 = 1,950).

JumpShips and space stations have stationkeeping drives that take up 1.2 percent of the vessel's total mass.

Kearny-Fuchida Hyperdrive

JumpShips and WarShips must be equipped with a Kearny-Fuchida (K-F) hyperdrive. JumpShips use the standard version of the K-F drive, which takes up 95 percent of the total mass of the vessel. WarShips use a compact version of the system that takes up 45.25 percent of the vessel's total mass. Vessels equipped with a K-F drive must also calculate the Drive Integrity, which is the drive system's ability to withstand damage, as shown on the K-F Drive Integrity Table.

K-F drive equipped vessels must be equipped with a jump sail to recharge their drive cores, the mass of which is shown on the Jump Sail Table. The Sail Integrity, like K-F Drive Integrity, determines the resilience of the jump sail.

Because carrying bombs reduces a fighter's available Thrust (p. 26), Doug decides to give his new fighter a very large engine. He settles on a Safe Thrust of 6, which requires a 380-rated engine. (6 – 2 = 4; 4 x 95 = 380) In order to save tonnage for armor and equipment, he makes it an XL engine. The Fusion Engine Table shows that a 380 XL engine weighs 20.5 tons.

5. SELECT STRUCTURAL INTEGRITY

A vessel's Structural Integrity (SI) determines a craft's general resilience, indicating how well it performs at high Gs and when damaged. With the exception of fighters, the SI of each vessel must be at least equal to its Maximum Thrust value; at the designer's discretion, the SI can be higher to improve resilience. Higher SI values, however, require additional mass for internal structural reinforcement. JumpShips and space stations have an effective SI of 1. The maximum SI of a DropShip or WarShip is 30 x its Maximum Thrust. Craft intended to tow other vessels must add 10 percent to their SI mass.

Fighters: The SI of fighters must equal their Safe Thrust value, or their tonnage divided by 10 (round down), whichever is higher. Fighters devote no mass to SI and cannot choose to increase the SI above the standard value.

The SI of Doug's fighter is 9 (mass divided by 10, rounded down), which is higher than its Safe Thrust. Tonnage does not need to be allocated to structure.

6. ADD CONTROL COMPONENTS

Each vessel must dedicate part of its mass to control systems. The mass required for such systems varies by vessel class, as shown on the Control Components Table.

The cockpit of Doug's fighter masses 3 tons.

7. ADD OTHER EQUIPMENT

After the vessel's chassis has been completed, the player must add the remaining systems. These include fuel reserves, armor, weapons and associated equipment. These components can be added in any order.

DETERMINE FUEL CAPACITY & EFFICIENCY

Each vessel must be equipped with tanks of reaction mass (fuel, in the case of conventional fighters). Fuel must be added in full-ton lots. Add 2 percent of the fuel's mass for fuel pumps in all vessels except fighters. For example, if a DropShip carries 100 tons of fuel, it must also have 2 tons of fuel pumps. The rate at which fuel is consumed is described in the *Fuel Consumption* optional rules, p. 37.

Tactical Fuel Efficiency

The number of fuel points available to each unit depends on its class and the number of tons dedicated to fuel tanks. To determine the number of points available, multiply the fuel tank tonnage by the modifier listed in the Fuel Point Table.

Strategic Fuel Efficiency

Vessels crossing a planetary system use a more efficient fuel system than when in combat. The amount of fuel used in such operations is expressed in Burn Days: the number of tons of fuel used per day if travelling at 1 G of acceleration. The Burn Day value of each vessel varies by class and civilian or military classification, as shown on the Strategic Fuel Use Table. Fighters do not have a Burn Day value and cannot travel through a planetary system.

Doug wants his fighter to have useful endurance, so he adds 5 tons of fuel (400 points). Because it is a fighter and cannot cross a planetary system, it does not need a strategic fuel efficiency rating.

ALLOCATE ARMOR

All vessels are provided with armor to protect them against space debris and weapons fire. Because large vessels have a larger surface area, however, they require more tons of armor to provide equivalent protection. This is reflected by reducing the number of Armor Points provided for each ton of armor as the vessel's mass increases. For example, 1 ton of armor on a fighter's nose would provide more protection than 1 ton of armor on a WarShip's nose, because the same ton of armor would have to cover more area on the WarShip.

All fighters receive 16 points of armor per ton. To determine the armor protection provided per ton for other vessel classes, consult the Aerospace Armor Table. Choose the column that represents the class of the vessel under construction, then find the row for the appropriate tonnage. Read across the row to the appropriate column for the technology base to find the Armor Points per ton. The armor for DropShips is given at the standard scale. The armor for JumpShips, WarShips and space stations is shown at the capital scale (in parentheses).

The amount of armor a vessel can carry is limited by the vessel's class, as shown on the Armor Limit Table.

Some vessel classes can improve the level of protection afforded by each ton of armor by using advanced composites, as shown on the Armor Composites Table. To find the number of Armor Points available to a vessel, multiply the base Armor Points by the listed multiple (round to the nearest whole num-

STRATEGIC FUEL USE TABLE

Vessel Class Mass (in tons)	Strategic Fuel Use* (tons/day)
Military DropShip	1.84
Civilian DropShip or small craft	
100–999	1.84
1,000–3,999	2.82
4,000–8,999	3.37
9,000–19,999	4.22
20,000–29,999	5.19
30,000–39,999	6.52
40,000–49,999	7.71
50,000–69,999	8.37
70,000–100,000	8.83
JumpShip, WarShip or space station	
Up to 49,999	2.82
50,000–99,999	9.77
100,000–199,999	19.75
Over 200,000	39.52

* Units at stationkeeping or which are unable to move, such as JumpShips or space stations, must spend fuel equal to one-tenth of a Burn Day to hold their position each day.

FUEL POINT TABLE

Class/Mass (in tons)	Fuel Points (per ton)
Aerospace Fighter	80
Conventional Fighter	160
DropShip or small craft	
Up to 399	80
400–799	70
800–1,199	60
1,200–1,899	50
1,900–2,999	40
3,000–19,990	30
20,000–39,999	20
40,000+	10
WarShip	
Up to 109,999	10
110,000–249,999	5
Over 250,000	2.5

ARMOR LIMIT TABLE

Class	Maximum Tons of Armor
Aerospace fighter	No restriction
Conventional fighter	1 point per ton of fighter; round down to nearest half ton
Aerodyne	SI x 4.5
Spheroid	SI x 3.6
JumpShip	Structural Mass ÷ 12
WarShip	Structural Mass ÷ 50

ARMOR COMPOSITES TABLE

Composite	Multiple	Cost Multiplier
Fighters and DropShips		
Ferro-aluminum (IS)	x1.12	2
Ferro-aluminum (Clan)	x1.2	2
JumpShips, WarShips and Stations	**Bonus**	
Improved Ferro-aluminum	+(.2)	5
Ferro-carbide	+(.4)	7.5
Lamellor Ferro-carbide	+(.6)	10

AEROSPACE ARMOR TABLE

MASS (IN TONS)			ARMOR POINTS PER TON*	
Spheroid Vessel**	Aerodyne Vessel**	JumpShip, WarShip or Station	IS	Clan
100–12,499	100–5,999	—	16	20
12,500–19,999	6,000–9,499	—	14	17
20,000–34,999	9,500–12,499	—	12	14
35,000–49,999	12,500–17,499	—	10	12
50,000–64,999	17,500–24,999	50,000–149,999	8 (.8)	10 (1)
65,000–100,000	25,000–35,000	150,000–249,999	6 (.6)	7 (.7)
—	—	250,000–2,500,000	(.4)	(.5)

* All fighters receive 16 Armor Points per ton of armor. Parenthetical values represent capital scale.
** DropShip or small craft.

ber). In the case of JumpShips, WarShips and space stations, add the bonus to the number of Armor Points the vessel receives per ton of armor. For example, a 200,000-ton Clan WarShip with ferro-carbide armor would gain 1.1 points of armor per ton (.7 + .4).

To reflect the added resilience provided by their SI, DropShips, small craft and larger vessels receive a bonus to each armor facing beyond the tonnage devoted to armor. On DropShips, this is equal to the vessel's SI. On JumpShips and larger vessels, it is equal to their SI divided by 10 (round to the nearest whole number, round up on .5).

Doug wants his fighter to be very heavily armored, so he adds 19.5 tons of ferro-aluminum armor. This provides 349 points of armor (16 x 19.5 x 1.12 = 349.44). He allocates 110 to the nose, 69 to the aft and 85 to each wing.

WEAPONS, AMMUNITION AND OTHER EQUIPMENT

Unless otherwise noted, all equipment can be used by all vessels of DropShip size or larger. Players building Inner Sphere vessels can select weapons from the Inner Sphere Standard Weapons Table (p. 99); players building Clan vessels choose from the Clan Standard Weapons Table (pp. 100–101). Capital weapons (p. 101) can be used for both Inner Sphere and Clan WarShips and space stations. Capital missiles can be installed on DropShips and non-combat JumpShips. Certain weapons and equipment included in the *BattleTech Master Rules* have been omitted from these tables because those weapons are not used on spacecraft or aircraft.

Aerospace fighters can use "Omni" technology in the same way as OmniMechs, in which case they assign only fixed equipment at this stage. Remaining mass is set aside as pod space (see p. 120, *BMR*).

Conventional fighters may not mount energy weapons.

Ammunition

Ammunition is added in full-ton lots (half-ton for machine guns). In addition, each weapon that requires ammo must be allocated a minimum of 10 shots of ammunition (20 for Ultra autocannons).

Assign Weapons to Firing Arcs and Bays

Weapons must be allocated to one of the firing arcs appropriate to the type of vessel (see *Firing Arcs*, p. 14). The following firing arcs must contain identical weaponry: fore-right and fore-left, broadsides, and aft-right and aft-left on large vessels, and the left-wing and right-wing arcs on fighters.

In addition, vessels of DropShip size or larger must group

weapons of the same class (as listed in the class column on the weapon tables) in the same arc into a weapon bay, to a maximum Attack Value of 70. To determine the Attack Value for a weapons bay, add all the weapons together, rounding to the nearest whole number (round up on .5). For a bay with an Attack Value higher than 70, divide the weapons as equally as possible between several bays.

On fighters, ammunition is stored in the fuselage. On larger vessels, ammunition stores should be assigned to each weapons bay.

Weapon Limits

Fire-control limitations restrict the number of weapons that can fit in each arc, though the more sophisticated systems of larger vessels allow for larger weapon arrays. Fighters can mount up to five weapons in each arc (a fighter equipped with ferro-aluminum armor may only mount four weapons on each wing). DropShips and JumpShips can mount up to twelve, while WarShips and space stations can have up to twenty.

These limits can be exceeded by assigning additional tonnage to fire control and power distribution systems. Any firing arc that exceeds the listed maximum number of weapons, but does not double the maximum number of weapons, must add 10 percent of the mass of all weapons mounted in that arc (not counting ammo). If the number of weapons is double the limit, but not triple the limit, the added mass is 20 percent. If the number of weapons is triple the limit but less than quadruple, add 30 percent, and so on. Increase the percentage by 10 for each multiple of the weapons maximum.

For example, a DropShip with 15 weapons totaling 100 tons in the nose must allocate 10 tons to fire control in that arc. A WarShip with 50 weapons in the right broadside totaling 1,000 tons would allocate 200 tons to fire control in that arc.

Doug adds the following weapons to his fighter, allocating one large laser to each wing and the remaining weapons to the nose.

2 large lasers (10 tons)
2 medium lasers (2 tons)
2 Gauss rifles (30 tons)
4 tons Gauss rifle ammunition

AEROSPACE EQUIPMENT TABLE

Equipment	Mass
All Vessels	
Cellular Ammunition Storage Equipment (CASE)	Inner Sphere: .5 tons per class of ammo Clan: Automatically equipped, no cost in mass
Non-Fighter Vessels	
'Mech/Fighter (<100 tons)	150 tons
Small craft bay (100–200 tons)	200 tons
Heavy Vehicle bay (51–100 tons)	100 tons
Light Vehicle or ProtoMech bay (up to 50 tons)	50 tons
Cargo bay	As capacity*
Steerage passengers	5 tons/person
Crew quarters/2nd class passengers	7 tons/person**
Officer quarters/1st class passengers	10 tons/person**
Infantry (foot)	5 tons/platoon (28 troops)
Infantry (jump)	6 tons/platoon (21 troops)
Infantry (motor)	7 tons/platoon (28 troops)
Battle armor	10 tons/point or squad (4-5 troops)
Towing adapter	100 tons†
Escape pod/lifeboat	7 tons
HPG	50 tons††
JumpShips, WarShips and Space Stations	
Docking Hardpoint	1,000 tons (max 1 per 50,000 tons)
Grav Deck (<100-meter diameter)	50 tons
Grav Deck (100–250 meter diameter)	100 tons
Lithium Fusion Battery	1 percent of ship's mass (maximum of 1 per ship)
Space Stations only	
Grav Deck (> 250-meter diameter)	500 tons
Energy Storage batteries	100,000 tons each
Repair Facilities (pressurized)	7.5 percent of the capacity
Repair Facilities (unpressurized)	2.5 percent of the capacity

* Use any tonnage remaining after installing weapons and all other systems for cargo.
** See *Add Crew Quarters* (p. 48) for crew requirements.
† Vessels designated for towing must devote 10 percent of their total mass to structural reinforcements.
†† ComStar or Clan vessels only.

8. ADD HEAT SINKS, CREW QUARTERS AND CARGO

The weapons complement assigned to a design determines the number of heat sinks needed and the number of crew required. When tonnage has been allocated for these elements, the remaining tonnage represents cargo space.

ADD HEAT SINKS

The fusion plant used to power all vessels except conventional fighters contains heat sinks, designed to dissipate the heat generated by the power plant and weapons fire.

The power plant contains a number of "free" heat sinks. These are incorporated into the engine and require no additional

MINIMUM CREW TABLE

Class	Crew
Crew	
DropShip or small craft (Civilian)	3 + 1 per 5,000 tons*
DropShip (military)	4 + 1 per 5,000 tons* + gunners
JumpShip	6 + 1 per 20,000 tons* + gunners
WarShip	45 + 1 per 5,000 tons* + gunners
Gunners	1 per 6 standard weapons
	1 per capital weapon

* Round fractions up.

HEAT SINK TABLE

Class	Free Heat Sinks*
Fighter (Fusion)	10
Fighter (Turbine)	0
Aerodyne DropShip (military)	Engine mass ÷ 20
Aerodyne DropShip or small craft (Civ)	Engine mass ÷ 60
Spheroid DropShip (military)	√ (Engine mass x 6.8)
Spheroid DropShip or small craft (Civ)	√ (Engine mass x 1.6)
JumpShip/WarShip/Space station	45 + √ (Engine mass x 2)

* Round fractions down.

mass; however, they are rarely sufficient to compensate for all the heat generated by the engine and weapons. These free heat sinks still cost C-bills when calculating the cost of a vessel, as shown on the Component Cost Table, p. 52. Additional heat sinks may be added at a cost of 1 ton each.

Spacecraft may also mount double heat sinks. These weigh 1 ton, but cost triple the price of standard heat sinks. Players can pay to replace the free heat sinks in the engines with double heat sinks.

Conventional fighters do not generate heat, and so do not need heat sinks.

Because vessels can generate more heat than they can dissipate, the number of heat sinks limits the number of weapons that can be fired each turn.

Because his fighter carries relatively few weapons, Doug chooses to add only one additional heat sink to the ten incorporated into the fusion engine and designates them all as double heat sinks. This weighs one ton, and allows the design to dissipate up to 22 points of heat each turn.

ADD CREW QUARTERS

Fighters have a single pilot and no crew quarters. Larger vessels require a minimum number of crew to operate systems and carry out repairs, determined using the formulae in the Minimum Crew Table, p. 48.

In keeping with standard military doctrine, standard crews consist of one officer for each five regular crew. For example, a vessel with 120 crew will have 100 enlisted personnel and twenty officers. Some military vessels, especially small vessels and Clan vessels, bunk enlisted personnel and officers together in the same quarters.

In addition to standard crew, an armed vessel must have an appropriate number of gunners to operate its weapons, as listed on the Minimum Crew Table.

CARGO

Cargo bays can contain any of the hundreds of things the vessel needs for day-to-day operations.

Food and Water

One ton of cargo space will contain sufficient sustenance for 200 people for one day. Round up to the nearest quarter ton.

For example, a loaded *McKenna* class battleship, with 578 crew and 296 passengers, will need 4.5 tons of food a day ([578 + 296] ÷ 200 = 4.37, rounded up to 4.5). On a 30-day patrol, it would need 135 tons of food. In comparison, a *Union* class DropShip, with 14 crew and 28 passengers, will need only a quarter-ton of food a day.

Spare Parts

Every vessel is constantly undergoing maintenance and repairs, which means a certain number of components must be kept on hand. Generally, a ship should carry a number of tons of spare parts equal to approximately 1 percent of the vessel's mass, though for long trips this may be as high as 5 percent.

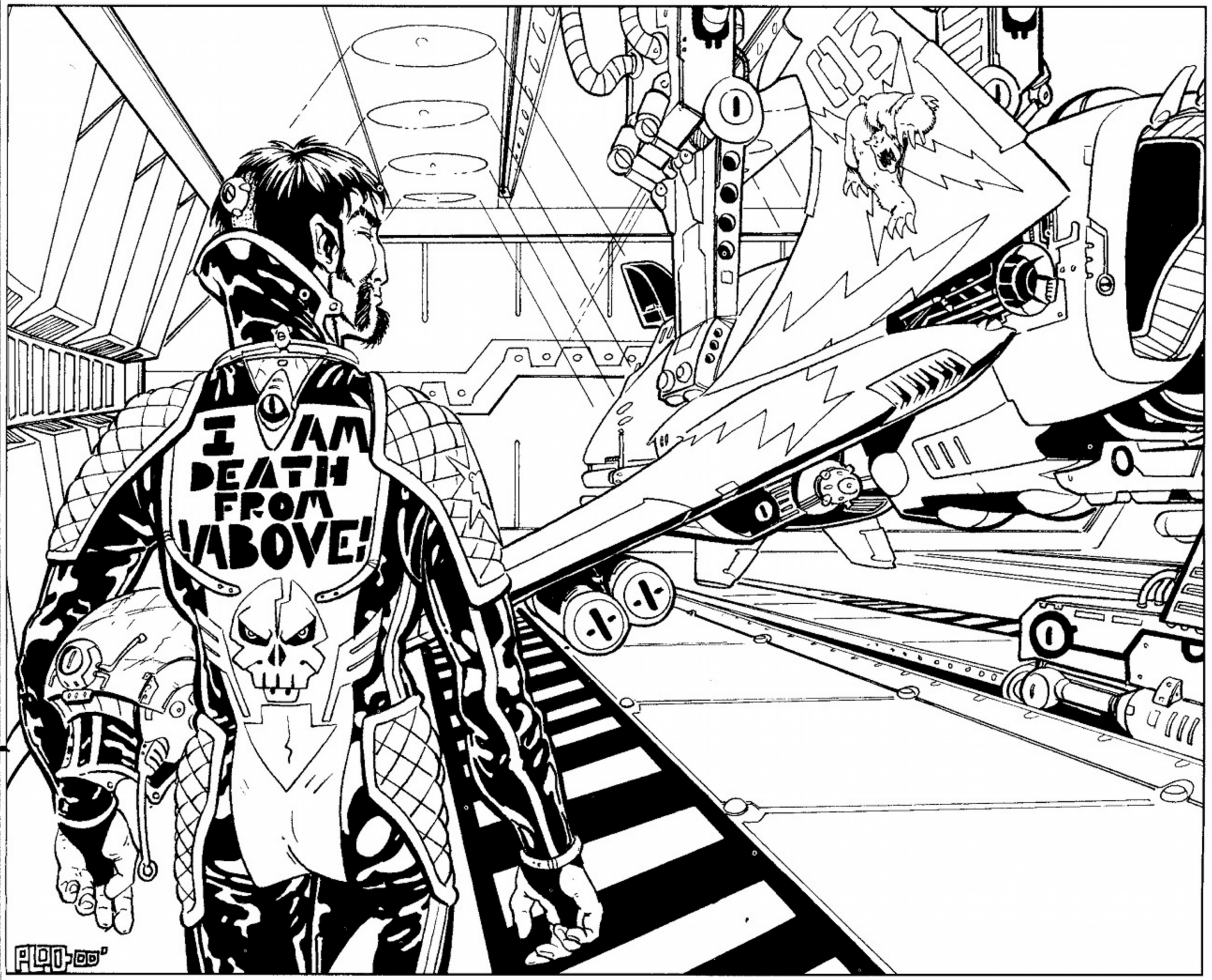
Ammunition

Though the magazine of each weapons bay is usually fully stocked when an armed vessel leaves port, a battle can swiftly consume these supplies. Therefore, many ships carry additional ammunition in their cargo bays. Players should use their judgment when determining the amount of extra ammunition carried.

Extra ammunition carried as cargo is not loaded into magazines, and as such cannot be used during combat. It must be loaded into the weapons between battles.

Fuel

Most vessels carry sufficient fuel to remain out in space a number of weeks. For craft that will spend a lot of time landed, docked, or at stationkeeping, this "operational" period can be stretched to several months. Unexpected circumstances—for example, use of the fusion plant to recharge a K-F drive or lithium fusion battery—may consume fuel faster. Cargo bays may be modified to hold polymer fuel cells that serve as additional



fuel tank space. Such additional fuel is generally consumed first, allowing the cargo bays to be used for something else. Every ton of cargo space allocated to additional tank space allows .9 tons of fuel to be stored (the other .1 ton is used for pumps and other fuel-storage equipment).

9. COMPLETE RECORD SHEET

Complete the appropriate record sheet for the vessel (see end of book).

Because his fighter was built in the German-influenced House Steiner, Doug chooses an appropriately fearsome German name: Eisensturm, *which means "Iron Storm." The completed fighter has the following statistics, and is ready to play.*

The EST-R3 Eisensturm *is an advanced aerospace fighter introduced in 3061 by Lockheed/CBM to replace the aging fleet of* Chippewas *that form the backbone of the Lyran air force. It mounts less weaponry than the fighter it replaces, but with more than twice the armor protection (more than any other standard-model fighter) and more thrust, it can carry a full bomb load to the target and expect to return to base intact. Its only weak point is a lack of aft-firing weapons, though its maneuverability and thick armor compensate for this.*

EST-R3 Eisensturm

Type: *Aerospace Fighter*	***Mass:*** *95 tons*
Tech: *Inner Sphere*	***Fuel:*** *5 tons (400 points)*
Safe Thrust: *6*	***Heat Sinks:*** *11 (22)*
Max Thrust: *9*	***SI:*** *9*
Armor: *110/85/69*	

ARMOR FACING TABLE

AeroTech 2 Facing	AT2 Value
Fighters/Small craft (standard scale)	
Nose	Nose armor + cockpit armor + .25 fuselage
Sides	Wing armor + .25 fuselage
Aft	Engine armor + .25 fuselage
DropShips (standard scale)	
Nose	Fore armor + .25 structure
Sides	Wing or side armor + .25 structure
Aft	Aft armor + .25 structure
JumpShips/WarShips (capital scale)	
Nose	(Fore armor + [side ÷ 3] + SI) ÷ 10
Fore Side (R/L)	(Fore-side armor + [side ÷ 3] + SI) ÷ 10
Aft Side (R/L)	(Aft-side armor + [side ÷ 3] + SI) ÷ 10
Aft	(Aft armor + [side ÷ 3] + SI) ÷ 10
Space stations (capital scale)	
Each Facing	Facing armor ÷ 10

WEAPON LOCATION TABLE

AeroTech Arc	AT2 Arc
Fighters/Small craft	
Nose or Fuselage	Fore
Wing (R/L)	Wing (R/L)
Aft and Aft Wings	Aft
DropShips	
Nose or Fuselage	Fore
Front Side or Wing (R/L)	Fore Side (R/L)
Aft Side or Aft Wing (R/L)	Aft Side (R/L)
Aft	Aft
JumpShips/WarShips	
Nose	Fore
Nose Side (R/L)	Fore Side (R/L)
Side (R/L)	Broadside (R/L)
Engine Side (R/L)	Aft Side (R/L)
Engine	Aft

Weapons	*Loc*	*Heat*	*SRV*	*MRV*	*LRV*	*ERV*
2 Medium Lasers	*Nose*	*3*	*5*	—	—	—
2 Gauss Rifles	*Nose*	*1*	*15*	*15*	*15*	—
Ammo (Gauss) 32						
Large Laser	*RW*	*8*	*8*	*8*	—	—
Large Laser	*LW*	*8*	*8*	*8*	—	—

CONVERTING CRAFT

Fighters and larger vessels created using the first edition *AeroTech* rules can be used in *AeroTech 2* with minimal conversion. Larger craft created under *BattleSpace* rules can also be converted.

AEROTECH TO AEROTECH 2

AeroTech craft are almost directly compatible with *AeroTech 2*, with a few minor adjustments to armor and firing arcs.

Movement

The *AT2* Safe Thrust value equals the thrust value of *AeroTech* craft.

The *AT2* Maximum Thrust value equals the Overthrust Value of *AeroTech* craft.

See the Fuel Point Table, p. 45, for fuel points per ton.

Firing Arcs

Divide the weapons into the firing arcs appropriate for the vessel type. The Weapon Location Table shows the relationship between the *AeroTech* firing arc and the *AeroTech 2* firing arc. Divide the damage of capital weapons by 10, rounding up.

Armor

Divide the armor assigned to each vessel into the armor facings appropriate to the vessel type. The Armor Facing Table shows the relationship between *AeroTech* facings and *AeroTech 2* facings. The Armor Values of fighters and DropShips are at the standard scale. The Armor Values of JumpShips and WarShips are at the capital scale. Round fractions up.

BATTLESPACE TO AEROTECH 2

The statistics provided for large vessels in *BattleSpace, Technical Readout: 3057* and the various *BattleTech Field Manuals* can be used in *AeroTech 2* games with the minimal conversion provided below. A complete list of converted fighter craft statistics begins on p. 81. For home-created fighter designs, you will get a more satisfactory result by recreating the craft using the *AT2* construction system rather than using the *BattleSpace* conversion rules.

Firing Arcs and Ranges

The firing arcs used in *BattleSpace* are identical to those used in *AT2*. Multiply the attack values of all standard weapon bays on *BattleSpace* craft by 10.

The ranges of *AeroTech 2* weapons vary by class.

Add together the heat generated by the bays in each firing arc.

Armor

BattleSpace and *AT2* use the same armor facings. Multiply by 10 to convert armor facing values for DropShips from capital to standard values. JumpShips, WarShips, and space stations use the capital-scale armor values.

COSTS

To determine the cost of a craft, add the cost of all the components. With the exception of fighters and small craft, round all C-bill costs to the nearest 1,000,000. Unless otherwise noted, treat small craft as DropShips.

COST MULTIPLIER TABLE

Craft Type	Total Cost Formula
Fighter	Component cost x (1 + tonnage ÷ 200)
Small craft	Component cost x (1 + tonnage ÷ 50)
OmniFighter	Component cost x 1.25 x (1 + tonnage ÷ 200)
Spheroid DropShips	Component cost x 28
Aerodyne DropShips	Component cost x 36
JumpShips	Component cost x 1.25
WarShips	Component cost x 2
Space stations	Component cost x 5

AEROSPACE COMPONENT COST TABLE

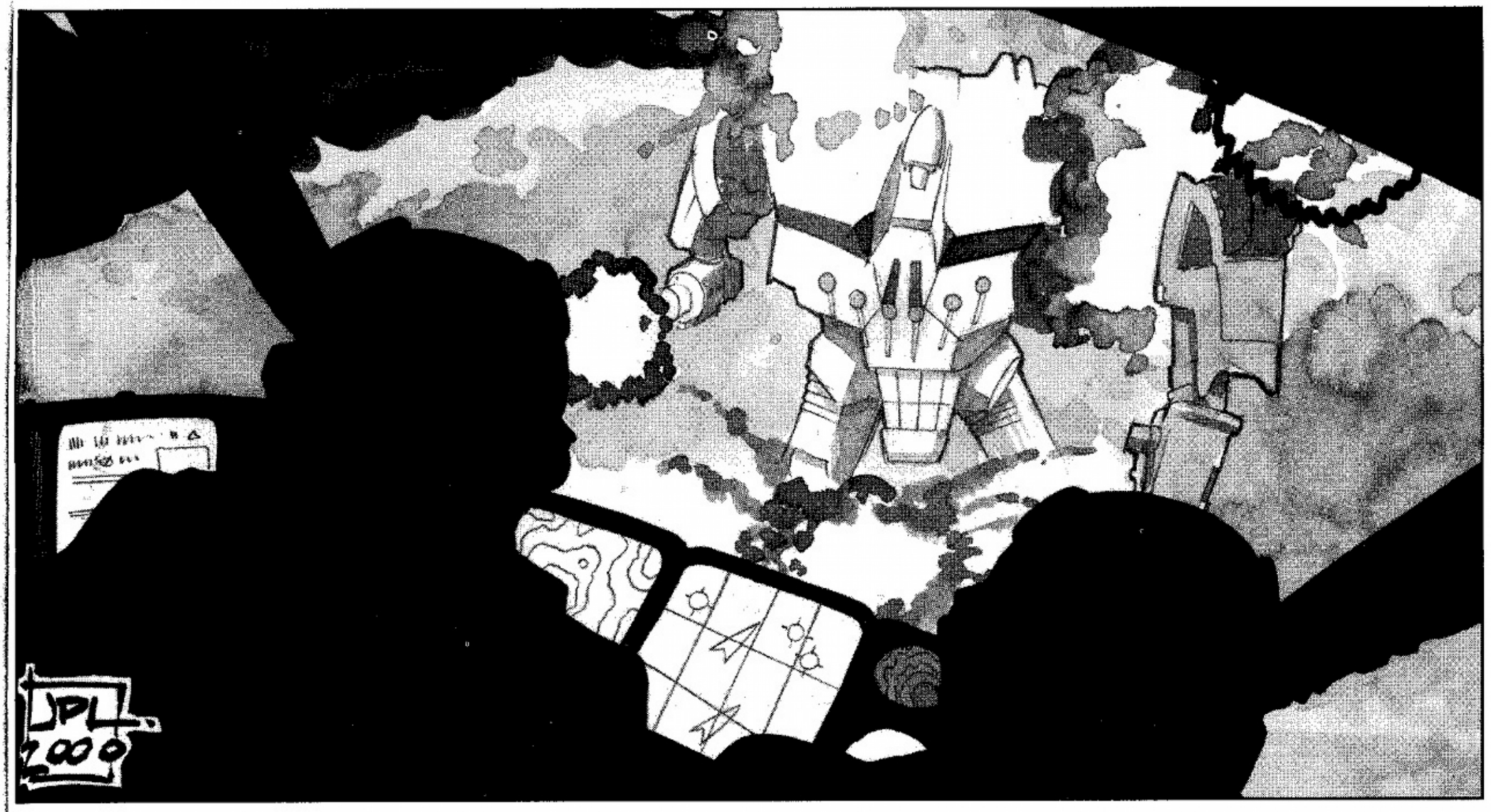
COMPONENT	COST
DropShips	
Armor	
Ferro-aluminum	20,000 C-bills per ton
Docking collar	10,000 C-bills
Tug docking/towing adapter	100,000 C-bills
Landing gear	10 C-bills x ship mass
JumpShips, WarShips, Space Stations	
Docking hardpoint	100,000 C-bills each
Grav deck (<100m)	5,000,000 C-bills
Grav deck (100–250m)	10,000,000 C-bills
Grav deck (251m+)	40,000,000 C-bills
K-F drive	
Coil	60,000,000 + (75,000,000 x max DropShips*) C-bills
Initiator	25,000,000 + (5,000,000 x max DropShips*) C-bills
Controller	50,000,000 C-bills
Tankage	50,000 C-bills per point of Drive Integrity
Sail	50,000 C-bills per ton of sail
Charging system	500,000 + (200,000 x max DropShips*) C-bills
Compact core	Multiply cost of all K-F drive components by 5**
Lithium fusion battery	Multiply cost of all K-F drive components by 3**
Repair facilities (pressurized)	10,000 C-bills per ton of capacity
Repair facilities (unpressurized)	5,000 C-bills per ton of capacity
WarShips	
Armor	
Improved ferro-aluminum	50,000 C-bills per ton
Ferro-carbide	75,000 C-bills per ton
Lamellor ferro-carbide	100,000 C-bills per ton

* Maximum number of DropShips the vessel can accommodate.
** Both multipliers apply if the craft has a compact core and LF battery.

AEROSPACE COMPONENT COST TABLE (CONTINUED)

COMPONENT	COST
Stations	
Armor	
Improved ferro-aluminum	50,000 C-bills per ton
Ferro-carbide	75,000 C-bills per ton
Lamellor ferro-carbide	100,000 C-bills per ton
Energy storage batteries	1,000,000 C-bills
Orbital factory equipment	5,000 C-bills per ton
All Craft	
Attitude thruster	25,000 C-bills
Armor	
Standard	10,000 C-bills per ton
Bay Door	1,000 C-bills each
Fuel tank	200 C-bills per ton
Heat Sinks	
Standard	2,000 C-bills each
Double	6,000 C-bills each
Weapons & Ammo	
Standard scale	Per *Weapon and Equipment Prices* (p. 138, *BMR*)
Capital scale	Per *Weapon and Equipment Battle Values and Costs*, p. 54
Fighters	
Armor	
CASE	50,000 C-bills per ammo class
Ferro-aluminum	20,000 C-bills per ton
Avionics (conventional fighter)	4,000 x control tonnage
Cockpit (aerospace fighter)	200,000 C-bills
Engine (fighter)	
Normal	([5,000 x Engine Rating x tonnage] ÷ 75) C-bills
XL	([20,000 x Engine Rating x tonnage] ÷ 75) C-bills
ICE	([1,250 x Engine Rating x tonnage] ÷ 75) C-bills
Landing gear	10 C-bills x ship mass
Life support (aerospace fighter)	50,000 C-bills
Sensors (aerospace fighter)	2,000 x fighter tonnage C-bills
Structure (conventional fighter)	4,000 C-bills per SI point
Structure (aerospace fighter)	50,000 C-bills per SI point
Large Craft (DropShips, JumpShips, WarShips, Space stations)	
Bridge	200,000 + (10 x craft tonnage) C-bills
Computer	200,000 C-bills
Drive unit	500 x Safe Thrust x (craft tonnage ÷ 100) C-bills
Engine (large craft)	1,000 C-bills per ton of engine
Engine control equipment (large craft)	1,000 C-bills
Escape pod	5,000 C-bills each
Fire control computer	100,000 C-bills
Gunnery control	10,000 C-bills per arc with weapons
Hyperpulse generator (not small craft)	1,000,000,000 C-bills
Life support (large vessel)	50,000 x (passengers + crew ÷ 10) C-bills
Lifeboat	5,000 C-bills each
'Mech/Fighter/Small craft cubicle	20,000 C-bills each
Sensors (large vessel)	80,000 C-bills
Structure (large craft)	100,000 C-bills per SI point
Vehicle cubicle	10,000 C-bills per vehicle

BATTLE VALUES



Units in *AeroTech 2* can be assigned Battle Values (BVs) in much the same way as BattleMechs and ground vehicles, as described in *BattleTech Master Rules* (pp. 139–45).

Battle Values for existing vessels begin on p. 74.

STEP 1: CALCULATE DEFENSIVE BATTLE RATING

First, **ADD** the following numbers.

Total Armor Factor x 2 (Fighters, DropShips, small craft)
Structural Integrity x 1.5 (Fighters, DropShips, small craft)
Total Armor Factor x 20 (JumpShips, WarShips, space stations)
Structural Integrity x 15 (JumpShips, WarShips, space stations)
Total tons of fuel
Total BV of all defensive equipment

(Defensive equipment includes antimissile systems [including ammo], ECM suites and screen launchers. All other weapons and equipment are considered offensive equipment.)

Then **SUBTRACT** the following numbers from the total for **fighters only.**

20 points per ton of explosive ammo not protected by CASE
10 points per ton of explosive ammo protected by CASE
(Maximum potential Heat Points – Heat Sink Capacity) x 5

Multiply the resulting Defensive Battle Rating by the unit class multiplier below.

Aerospace fighter	x 1.2
Conventional fighter	x 1.1
WarShip, DropShip or small craft	x 1.0
JumpShip, space station	x .8

STEP 2: CALCULATE OFFENSIVE BATTLE RATING

Calculate the Offensive Battle Rating as follows.

Calculate Base Weapon Battle Rating

Add the BV of all weapons, ammunition and equipment not figured into the Defensive Battle Rating. Aft-mounted weapons add their full value.

To prevent excessive ammo from distorting the Battle Value, the BV added for ammunition cannot exceed the BV of the weapon itself. If the BV for ammo exceeds the BV of the weapon, simply reduce the ammo BV to match the weapon BV. For example, if a DropShip had four Inner Sphere LRM-20s and 50 tons of LRM-20 ammunition, the BV of the LRM ammo would be 724 (the same as the total BV of the LRM launchers), rather than 1,150.

Adjust the Base Weapon Battle Rating for Heat Efficiency

If the unit's maximum potential Heat Points exceed the unit's heat sink capacity, adjust the Base Weapon Battle Rating as follows.

WEAPON AND EQUIPMENT BATTLE VALUES AND COSTS

Item	Item BV	Ammo BV (per ton)	Cost (unloaded)	Ammo Cost (per ton)
Capital Energy Weapons				
NL35	832	—	500,000	—
NL45	1,081	—	850,000	—
NL55	1,322	—	1,250,000	—
Light NPPC	1,663	—	2,000,000	—
Medium NPPC	2,163	—	3,250,000	—
Heavy NPPC	3,605	—	9,050,000	—
Capital Ballistic Weapons				
NAC/10	1,901	238	2,000,000	30,000
NAC/20	3,802	475	5,000,000	60,000
NAC/25	4,752	594	7,500,000	75,000
NAC/30	5,702	713	10,500,000	90,000
NAC/35	4,959	620	14,000,000	105,000
NAC/40	5,668	708	18,000,000	120,000
Light N-Gauss	2,884	360	20,300,000	45,000
Medium N-Gauss	4,806	601	30,350,000	75,000
Heavy N-Gauss	5,767	721	50,050,000	90,000
*Capital Missile Weapons**				
Killer Whale	769	96 each	150,000	20,000 each
White Shark	577	72 each	130,000	14,000 each
Barracuda	522	65 each	90,000	8,000 each
AR10 Launcher	961	—	250,000	—
Kraken-T	2,306	288 each	500,000	55,000 each
Killer Whale-T	923	115 each	165,000	17,000 each
White Shark-T	692	86 each	145,000	12,000 each
Barracuda-T	461	58 each	100,000	7,000 each
Screen Launcher	160	20 each	250,000	10,000 each

* The Ammo Battle Values and Ammo Costs for capital missiles are per missile, not per ton of ammo.

Heat for the AR-10 launcher is calculated at 20 Heat Points.

X = (Total heat sinks x Base Weapon Battle Value)
÷ maximum Heat Points

For Fighters: Y = (Base Weapon Battle Value – X) ÷ 2

For Non-Fighter Craft:
Y = (Base Weapon Battle Value – X) ÷ 10

The Modified Weapon Battle Value is X + Y

Calculate Bombing Battle Rating (fighters only)

The Bombing Battle Value equals the fighter's tonnage.

Calculate Total Offensive Battle Rating

The Total Offensive Battle Rating equals the Modified Weapon Battle Rating plus the Bombing Battle Rating.

Multiply the Total Offensive Battle Rating by Speed Factor

A unit's Speed Factor reflects its ability to maneuver on the battlefield. To find the Speed Factor of a fighter, cross-reference the Maximum Thrust value with the Speed Factor Table (p. 140, *BMR*). For JumpShips, WarShips, DropShips and space stations, use the Safe Thrust value rather than the Maximum Thrust. Multiply the Total Battle Rating by the Speed Factor to find the unit's Offensive Battle Rating.

STEP 3: CALCULATE FINAL BV

The BV of a unit is calculated by adding its Defensive and Offensive Battle Ratings. In the case of fighters, this is also the final BV. Larger vessels apply a modifier to this subtotal, determined by dividing the subtotal BV by 1,000,000 and adding 1. Divide the subtotal BV by this modifier to find the final BV.

Round any remaining fractions to the nearest whole number.

For example, a DropShip with a subtotal BV of 10,000 would have a modifier of 1.01 (10,000 ÷ 1,000,000 = 0.01). The final BV of this DropShip would be 9,901 (10,000 ÷ 1.01 = 9900.99 rounded to 9901).

ROLEPLAYING RULES

The following section provides additional traits, skills, and life paths that can be used in conjunction with the character creation section of *MechWarrior, Third Edition (MW3)*. Also included are expanded rules for using *MW3* characters in *AT2*.

TRAITS

Unless otherwise stated, these traits follow the rules in *MW3* (see p. 78, *MW3*).

COMBAT PARALYSIS AND COMBAT SENSE (EXPANDED)

The ability to take swift and insightful actions in combat is an essential part of being a pilot. Characters with the Combat Sense Advantage have a proverbial leg-up on their enemies. When using individual Initiative characters roll 3D10 and keep the highest results. If the *AT2* Initiative system is used, characters with the Combat Sense trait gain a +1 bonus to their Initiative rolls (or Tactics Skill rolls as appropriate, see *Initiative Phase*, p. 6). Conversely, characters with the Combat Paralysis Trait are at a disadvantage. They keep the lowest two dice when determining Initiative, and suffer a –1 penalty to their Initiative if using the *AT2* system.

G-TOLERANCE (EXPANDED)

Characters with the G-Tolerance trait have a –2 TN modifier relating to the effects of high gravity. This gives characters a major advantage when executing high-G maneuvers (see p. 8). For example, if a fighter spends 14 thrust in a single maneuver, a roll would normally be made against a Target Number of 4. A character with the G-Tolerance Trait would roll against a Target Number of 2.

POOR VISION (EXPANDED)

Eye-limb coordination is vital for pilots, and any reduction in their vision can have profound effects. If the character has a Poor Vision Trait of 2 or 4, the value of that trait applies as a target number modifier to all *AT2* to-hit numbers. Characters with a Poor Vision Trait of 6 cannot fly aircraft or serve on spacecraft crews.

TRANSIT DISORIENTATION SYNDROME (EXPANDED)

Characters with TDS rarely serve as fighter pilots, and almost never on the crews of larger vessels. Fighter pilot characters with TDS suffer a +3 modifier on all to-hit and Piloting Skill Rolls if they are required to fight within fifteen minutes of making a jump (this replaces the usual Stunned effect).

VEHICLE (EXPANDED)

The fighter and DropShip assignment tables on p. 94 of *MW3* are generic. The tables on pp. 63–64 expand on those to reflect regional variations in the deployment of such units.

Characters from the Free Rasalhague Republic roll for fighters on the House Kurita table, but can choose to roll one fighter per squadron of six either on the House Steiner or ComStar table instead.

SKILLS

The following section expands upon the use of certain *MW3* skills in *AeroTech 2*, as well as providing details of three new skills and sub-skills. Unless otherwise stated, these skills follow the rules in *MW3* (see p. 95, *MW3*).

Skill Specialization

Many of the skills presented on pages 95–108 of *MW3* cover a wide range of tasks. To add more detail to aerospace-based games, *AeroTech 2* allows characters with certain skills to specialize.

Specializations are *not* new sub-skills (p. 95, *MW3*). When a character carries out a task in which he is specialized, the relevant skill bonus is increased by one. When using an aspect of the skill outside the specialization, the skill bonus is decreased by one. This can reduce the skill bonus below 0. For example, a character with the Bombing Skill at +2 specializes in Dive-Bombing. When dive-bombing, the effective skill bonus is +3. When using the Bombing Skill for other purposes, the effective skill bonus is reduced to +1.

Characters can choose only one specialization per skill (or sub-skill). Specializations are optional.

ARTILLERY (EXPANDED)

Characters with the Artillery Skill can spot for orbital bombardment, but use only half their Artillery Skill bonus (rounded down) when doing so.

BOMBING (EXPANDED)

The Bombing Skill listed in *MW3* covers a wide range of tasks, from dive-bombing and level-bombing to accurately inserting BattleMech drop cocoons onto the appropriate re-entry vector. Valid specializations for the Bombing Skill are Level-Bombing, Dive-Bombing, Crop Dusting, and Payload Delivery.

The pilot of a DropShip releasing BattleMechs or Battle Armor for a combat drop should make a Bombing/Payload Delivery roll. The MoS or MoF of this roll is applied as a modifier to any Piloting Skill or re-entry rolls required of the dropped units (the MoS is applied as a negative modifier, making the task easier, while the MoF is applied as a positive TN modifier).

GUNNERY/ORBITAL BOMBARDMENT (NEW, DIFFICULT)

This rare skill is used to fire or spot for capital-scale weapons mounted on orbiting vessels at targets on a planetary surface. It replaces the relevant Gunnery Skill when weapons are used for orbit-to-surface fire.

PILOTING (EXPANDED)

Each of the piloting sub-skills listed in *MW3* covers a range of tasks, including atmospheric and space operations, NOE

flight, landing, and docking maneuvers. Characters can choose to specialize in one aspect of the Piloting Skill. The specializations available depend on the sub-skill.

Aero:	Space operations, atmospheric operations, NOE flight, landing
Air:	NOE flight, landing
Jump:	Docking
Spheroid:	Space operations, atmospheric operations, landing, docking

TACTICS/AIR SUPPORT (NEW, DIFFICULT)

The tactics of aerospace operations in support of ground troops differ markedly from air and ground. The Air Support subskill is used by characters involved in combat that combines air and ground forces. See *Initiative Phase* (p. 6) for details on how this skill (or lack of it) affects game play.

ZERO-G OPERATIONS (EXPANDED)

In addition to conferring experience in zero-G environments, the zero-G Operations Skill serves as a limit on the Skill Bonuses of characters in zero-G. While in such conditions, no character can use a skill bonus for a physical skill (one with a Link Attribute of STR, BOD, DEX or RFL) greater than the bonus in Zero-G Operations.

A character is in zero-G. He has an Acrobatics Skill Bonus of +2, a Languages Skill Bonus of +4, a Pistols Skill Bonus of +3 and a Zero-G Operations Skill Bonus of +2. Acrobatics is a physical skill, and the usable bonus cannot exceed the Zero-G Operations bonus. Because the zero-G Skill Bonus is +2, Acrobatics is unaffected. The skill bonus for Languages exceeds the Zero-G bonus, but it is not a physical skill. Therefore, the character can use the full skill bonus. The Pistols Skill bonus also exceeds the Zero-G bonus, but Pistols is a physical skill. Therefore, the effective skill bonus for Pistols cannot exceed +2.

USING MW3 CHARACTERS

The Vehicular Combat rules (p. 126, *MW3*) apply to *AeroTech 2* as they do with *BattleTech*, with the following exceptions.

INITIATIVE

In space battles, Initiative should be resolved as an Opposed Tactics/Space Skill Check between the commanders of each side. In atmospheric battles, the Opposed Skill Check should use the Tactics/Air Skill. Battles involving both air and space elements, or involving ground troops, are more complex. If the battle involves ground and air action, use the Tactics/Air Support Skill (p. 56). If the battle involves air and space, or air, space, and ground forces, then the Strategy Skill applies instead.

If the commander does not have the relevant skill to use for Initiative, the Untrained Skill Use rule applies (p. 16, *MW3*).

WARRIORS

Player character pilots can be quickly converted for use in *AeroTech 2* using the rules on pp. 126–127 of *MW3*. Convert each Piloting and Gunnery Skill as appropriate for the unit class (Gunnery/Aero for fighters and Aerodyne DropShips, and Gunnery/Space for Spheroid DropShips and all large vessels). Each skill should be used when firing the appropriate weapon in *AeroTech 2*. Fighter pilots should also convert their Bombing Skill as if it were a Gunnery Skill.

A House Kurita pilot has a Gunnery/Laser/Aero Skill of +2, a Gunnery/Ballistic/Aero Skill of +3, a Gunnery/Missile/Aero Skill of +0 and a Bombing Skill of +2. When firing laser weapons, he has a Gunnery Skill of 4. When using Ballistic weapons the Gunnery Skill is 3, and when using missiles it is 5. Additionally, he has a Gunnery Skill of 4 when bombing.

CASE-SPECIFIC MECHWARRIOR RULES

Though not directly applicable to *AeroTech 2*, a number of *MW3* skills relate to space situations. Most can be handled with common sense by the gamemaster, but a few call for more complex systems and rules.

JUMP POINTS

For ease of reference, this section refers to all jump-capable vessels as JumpShips.

To perform a jump safely, a jump-capable vessel must be in an area free of gravitational influences. Such areas are known as either Proximity Points or Jump Points. The two most commonly used jump points are at the zenith and nadir of the gravity well, along the line that passes through the system's gravitational center and is perpendicular to the plane of the star system. These two points lie at the minimum safe jump distance from the main star and simplify navigational calculations (see diagram, p. 57).

The zenith and nadir are the most commonly used points, especially for civilian traffic, but are not the only options. A JumpShip can travel to any point in a star system that is at least as far away from the star as the distance listed on the Proximity Point Distance Table, p. 57. These jump points form a sphere around the star, although the gravitational fields of large planets might distort this.

A skillful navigator can use detailed information regarding a planetary system to calculate a jump point much closer to the intended destination than the zenith or nadir. This can drastically reduce transit times and fuel consumption, and will give defenders less time to react. Additional points, known as transient points, may exist *within* a system where gravitational forces cancel each other out—such as between a planet and a moon. These points are also known as LaGrange points. These points are often used by raiders and smugglers, and are often referred to as *pirate points*.

Transient points can be anywhere in a system, and can come

PROXIMITY POINT DISTANCE TABLE

Distances in billions of kilometers

Star Type	Star Subtype 0	1	2	3	4	5	6	7	8	9
B	347.84	282.07	229.40	187.12	153.06	125.56	103.29	85.20	70.47	58.44
A	48.59	40.51	33.85	28.36	23.82	20.06	19.63	14.32	12.15	10.32
F	8.80	7.51	6.43	5.51	4.74	4.08	3.52	3.04	2.64	2.29
G	1.99	1.74	1.52	1.33	1.16	1.02	.90	.79	.70	.62
K	.55	.49	.43	.39	.34	.31	.28	.25	.22	.20
M	.18	.16	.15	.13	.12	.11	.10	.09	.08	.07

DISTANCE TO ZENITH/NADIR JUMP POINT

In days, assuming 1G acceleration and mid-point turnover

Star Type	Star Subtype 0	1	2	3	4	5	6	7	8	9
B	137.91	124.19	112.00	101.15	91.48	82.86	75.15	68.25	62.07	56.53
A	51.54	47.06	43.02	39.38	36.09	33.12	32.76	27.98	25.77	23.75
F	21.94	20.26	18.75	17.36	16.10	14.94	13.87	12.89	12.01	11.19
G	10.43	9.75	9.12	8.53	7.96	7.47	7.01	6.57	6.19	5.82
K	5.48	5.18	4.85	4.62	4.31	4.12	3.91	3.70	3.47	3.31
M	3.14	2.96	2.86	2.67	2.56	2.45	2.34	2.22	2.09	1.96

and go in seconds. This makes them difficult to use without planning well in advance. Some systems simply do not have useful pirate points. Because of the very nature of transient points, they are not covered by the following rules. Gamemasters may wish to use pirate points in certain adventures, however; in such cases, the gamemaster sets transit distances and times.

Sol is a G2 star. To determine the distance from the star, cross-index the G row with the 2 column on the table. The result is 1.52. Because the figures given are in billions of kilometers, the distance from the star to the minimum standard jump point is 1.52 billion kilometers. A standard transit at 1G would take 9.12 days.

Navigation Calculations

Before a JumpShip enters hyperspace, the crew must calculate an appropriate path between the current position and the destination. The vessel's navigator makes a Navigation/Jump Drive Skill Check against a Target Number 12, applying the appropriate modifiers from the Hyperspace Navigation Table (p. 57).

All jump-capable vessels are equipped with a navigation computer; a modifier is provided for cases where a nav computer is unavailable or inoperative.

The length of time for these calculations varies considerably depending on the complexity of the calculations and the availability of a navigation computer. The minimum time for these calculations is 10 minutes with a computer, and one hour without.

If the roll succeeds, a point is calculated. If the roll fails, time elapses without a point being calculated.

HYPERSPACE NAVIGATION TABLE

Situation	Modifier
Calculations made without navigation computer*	+2
Destination is nadir or zenith	0
Destination is non-standard point*	+4
Destination is transient point (cumulative)**	+4
Origin point is at nadir or zenith	0
Origin is non-standard point	+2
Origin is transient point (cumulative)	+2

*Non-standard points cannot be calculated if a navigation computer is unavailable.

** Transient points require detailed charts of the destination system.

CALCULATION TIME TABLE

Target is zenith or nadir	
With computer	(2–6 - MoS) x 10 minutes
Without computer	(2–6 - MoS) hours
Target is non-standard jump point	
With computer	(2–6 - MoS) x 30 minutes
Without computer	Impossible

JUMP SAIL RECHARGING TABLE

Results in hours

Star Type	Star Subtype 0	1	2	3	4	5	6	7	8	9
M	201	202	203	204	205	206	207	208	209	210
K	191	192	193	194	195	196	197	198	199	200
G	181	182	183	184	185	186	187	188	198	190
F	171	172	173	174	175	176	177	178	179	180
A	161	162	163	164	165	166	167	168	169	170
B	151	152	153	154	155	156	157	158	159	160

Jump Process

Once calculations are made, the coordinates are programmed into the K-F drive, a process which takes (2D10 – Navigation/Jump Drive Skill Bonus) minutes. At this point, the pilot can choose to execute the jump or to wait. There is no limit on the length of time a vessel can wait at the zenith or nadir point, or at a non-standard point lying outside the minimum safe distance from the star. However, routes plotted to or from transient points are only good for 20 minutes. After that time, orbital movement makes the calculations useless and the process must begin again.

Once a vessel is committed to a jump, it takes 10 minutes for the program to initialize. At this point warning klaxons sound to alert the crew, followed by additional warnings at 5 minutes, 1 minute, 30 seconds and 10 seconds before the jump.

The jump seems instantaneous, but it actually can take several minutes. The time varies depending on the distance traveled and the size of the JumpShip. The elapsed time in seconds is [light years traveled ÷ 2] x maximum number of DropShips the JumpShip can carry.

Upon "arriving" at the intended destination, the navigator makes a second Navigation/Jump Drive Skill Check, this time against a Target Number 10. Apply the MoS from the original coordinate calculation as a bonus to the roll. Additionally, apply a +2 modifier to the target number for every point of damage sustained by the ship's K-F drive. Success indicates a "clean" jump, while failure indicates a miscalculation or erroneous data, causing damage or possibly destroying the ship.

If the roll fails, apply (1D6 x 10 x MoF) boxes of damage to each armor facing of the JumpShip and any DropShips carried. In addition, reduce the JumpShip's K-F Drive Integrity by the MoF. If the Drive Integrity is reduced to zero or lower, the K-F drive and the vessel are destroyed, along with all DropShips carried.

QUICK-CHARGE TABLE

Time Spent (Hours)	Target Number
150+	2
125–150	3
100–124	4
75–99	6
25–74	7
22–24	8
20–21	10
19	12
18	14
17	16
16	18
15	N/A

QUICK-CHARGE FAILURE TABLE

Die Roll (1D10)	Result
2	40% charge lost
3	60% charge lost
4	80% charge lost
5	80% charge lost
6	100% charge lost
7	100% charge lost
8	100% charge lost; reduce K-F Drive Integrity by 1
9	100% charge lost; reduce K-F Drive Integrity by 2
10	100% charge lost; reduce K-F Drive Integrity by 3
11	100% charge lost; reduce K-F Drive Integrity by 4
12	100% charge lost; reduce K-F Drive Integrity by 5
13+	100% charge lost; K-F drive destroyed

Charging the Drive

Normally a JumpShip recharges its K-F drive with energy gathered via the massive collector sail, commonly known as the jump sail. The sail is fragile, and great care is taken when deploying it. The officer commanding the operation should make a Career/Ship's Crew Skill Check against Target Number 8. Success indicates the operation is successful, while failure causes damage to the Sail Integrity equal to the MoF.

Deployment of the sail normally takes 80 minutes, while furling requires twice that. For every 10 minutes (or fraction thereof) subtracted from this time, apply a +1 modifier to the target number for the operation. Conversely, for every 10 minutes added to the furling or deployment, the target number is reduced by 1 (to a minimum of 4). For example, a furling operation would normally take 160 minutes. A crew decides to reduce this to 120 minutes. As this is 40 minutes less than normal, a +4 modifier applies to the target number for furling. Had the same crew opted to increase the time taken for the furling operation to 200 minutes, it would have reduced the target number to 4.

The time required for recharging the Kearny-Fuchida drive is governed by the star type of the current system. To determine the time, compare the star's type with its subtype. This time is the minimum required, and will be increased by 10 percent for each point of Sail Integrity damage suffered by the jump sail.

Alternatively, JumpShips and WarShips can use their power plants to recharge the drive. Each day the power plant is used for recharging requires a full Burn Day of fuel—above any fuel required for maneuvering or station-keeping. Attempts to recharge the K-F drive faster can result in drive damage. To determine if damage occurs, the chief engineer of the vessel should make a Technician/Jump Drive Roll against the target number indicated in the Quick-Charge Table (p. 58) at the end of the elapsed time.

If the roll is successful, the drive is fully charged. If the roll fails, roll 1D10, adding the MoF as a modifier to the roll, and consult the Quick-Charge Failure Table (p. 58).

Lithium Fusion Batteries

Though expensive, lithium fusion batteries have become increasingly common over the past two decades. The system serves as an energy store, allowing the vessel to make a second hyperspace jump. Charging the lithium fusion battery is handled like charging the K-F drive, and both can be charged simultaneously. If a failed quick-charge of an LF battery indicates a reduction in K-F Drive Integrity, the battery is destroyed instead.

MOVING CARGO

Military and civilian vessels transfer cargo in a wide range of conditions. The amount of cargo that can be moved in any given period depends on the conditions and the method of moving.

Industrial exoskeletons (IEs) are the most common means of moving cargo, but many crews must move cargo by hand. Some military units use BattleMechs to move cargo. Treat Battle Armor suits as industrial exoskeletons. Maneuvering cargo in zero-G is difficult—unless the cargo has maneuvering devices attached. These include null-G packs, which are briefcase-sized thrusters operated much like a space version of a forklift. Most starports are equipped with cargo platforms incorporating cranes and conveyor belts that significantly speed up loading and unloading.

To determine the amount of cargo moved per minute, reference the method of moving it with the prevailing conditions on the Cargo Transport Table (p. 59). If characters are involved, they should make Career/Ship's Crew Skill Checks once per cargo bay. For each point of MoS or MoF, they may increase (or decrease in the case of a failed roll) the amount of cargo moved by 10 percent.

BUYING AND SELLING VESSELS

Buying a DropShip or JumpShip is a major undertaking. Even the most common craft cost millions of C-bills. And the price can fluctuate drastically depending on availability and the buyer and seller's negotiation abilities.

CARGO TRANSPORT TABLE

RESULT IN TONS/MINUTE

		Conditions	
Method	**Zero-G**	**Gravity**	**Vacuum**
Per IE	0.1	1	x1.0
Per IE with null-G packs	0.5	N/A	x1.0
Per person	0.05	0.2	x0.75
Per person with null-G packs	0.5	N/A	x0.75
Light Cargo Platform	N/A	1	x1.0
Heavy Cargo Platform	N/A	2	x1.0
BattleMech	Mass / 30	Mass / 20	x1.0

VESSEL AVAILABILITY MODIFIERS

World is part of major Inner Sphere state	–1
World is part of minor Inner Sphere state (e.g. Free Rasalhague Republic)	0
World is in the Chaos March	+1
World is in the Clan Occupation Zone	+2
World is part of major Periphery state (e.g. Taurus, Canopus or Outworlds)	+1
World is in minor Periphery state	+2
Vessel manufactured at world	–1
World is contested/in war zone	+2
Vessel is JumpShip	+5
Vessel is assault DropShip	+4
Vessel is 'Mech or fighter carrier DropShip	+3
Vessel is troop or vehicle carrier DropShip	+2
Vessel is cargo carrier DropShip	–2
Vessel is liner DropShip	+1
Vessel is tug DropShip	+2
Vessel uses Clan technology	+2

BUYING A CRAFT

The first step in purchasing a craft is to choose the class and type desired. It is much easier to find civilian craft than military, and cargo-haulers are more common than attack craft. To determine if such a craft is available, the buyer should make a Scrounge Skill Check, adding the above modifiers to the Base Target Number of 15. Success indicates one or more vessels are available in the current planetary system. The number of leads equals one plus the MoS divided by three (round fractions down). Only one such roll can be made per week. If the roll fails, the time is wasted.

Anne's character is in the Lyran Alliance. She attempts to acquire a troop carrier DropShip for her unit. The net TN for the attempt is 16 (Base of 15, –1

for "Part of a major Inner Sphere state" and +2 for a troop carrier). She rolls a 14, to which she adds her Scrounge Skill Bonus of +3 for a result of 17, resulting in an MoS of 1. The number of leads is 1 + (MoS / 3) or 1.3, rounded down to 1.

Once a lead has been identified, the player and gamemaster should make an Opposed Action Check using the Negotiation Skill (assume a Skill Bonus of +3 for the gamemaster if specific skills are not available). Subtract the player's MoS from that of the gamemaster and multiply the result by five. Increase or decrease the base cost by this percentage. No price can be reduced below 75 percent of the base price. There is no upper limit.

Note that military vessels, including armed fighters, will have Legality Ratings of E or even F, and will generally only be available via the black market (p. 131, *MW3*), increasing the cost dramatically.

Anne makes a Negotiation Roll, as does the gamemaster. Anne's Action Check results in an MoS of +2 while the gamemaster's MoS is +1. Subtracting Anne's MoS from that of the gamemaster results in a –1. The base cost of the vessel is reduced by five percent.

SELLING A CRAFT

When selling a vessel, the player decides upon a starting asking price. The chance that a buyer will be interested (per week) is determined by a 2D10 Action Check against a TN 15. Modify the TN by +1 per 5 percent of the asking price above the list price or –1 per 10 percent under the list price. This is shown in the vessel's description, or determined by the formula in *Costs*, p. 51. The number of interested buyers is equal to the MoS divided by 2, rounded up.

The player should then make an Opposed Negotiation Skill Check against the buyer as outlined in *Buying a Craft*, except that the gamemaster's MoS is subtracted from the player's. A player can decide to withdraw a vessel from sale if the price falls too low.

ADDITIONAL LIFE PATHS

The following section contains a number of Life Paths unique to aerospace and naval personnel. Players and gamemasters can use these in conjunction with the paths in *MW3* (p. 33). The paths presented here each have some basic prerequisites, such as required Attributes, etc.

Additional Occupational Fields for these paths appear on page 62.

EVENTS

Each of the paths below has a unique list of events. Players and gamemasters will follow the standard rules for determining character events (p. 24, *MW3*), with one exception: instead of rolling 2D6, players roll 2D10 to randomly select an event. In addition, each Edge point spent to affect an event roll on these tables can be used for a re-roll or to modify the result by one or two points.

PREVIOUS PATH

The following paths list the previous paths that a character must first progress through before entering these paths (you only need to have taken one of these previous paths).

SPACER FAMILY (STAGE 2)

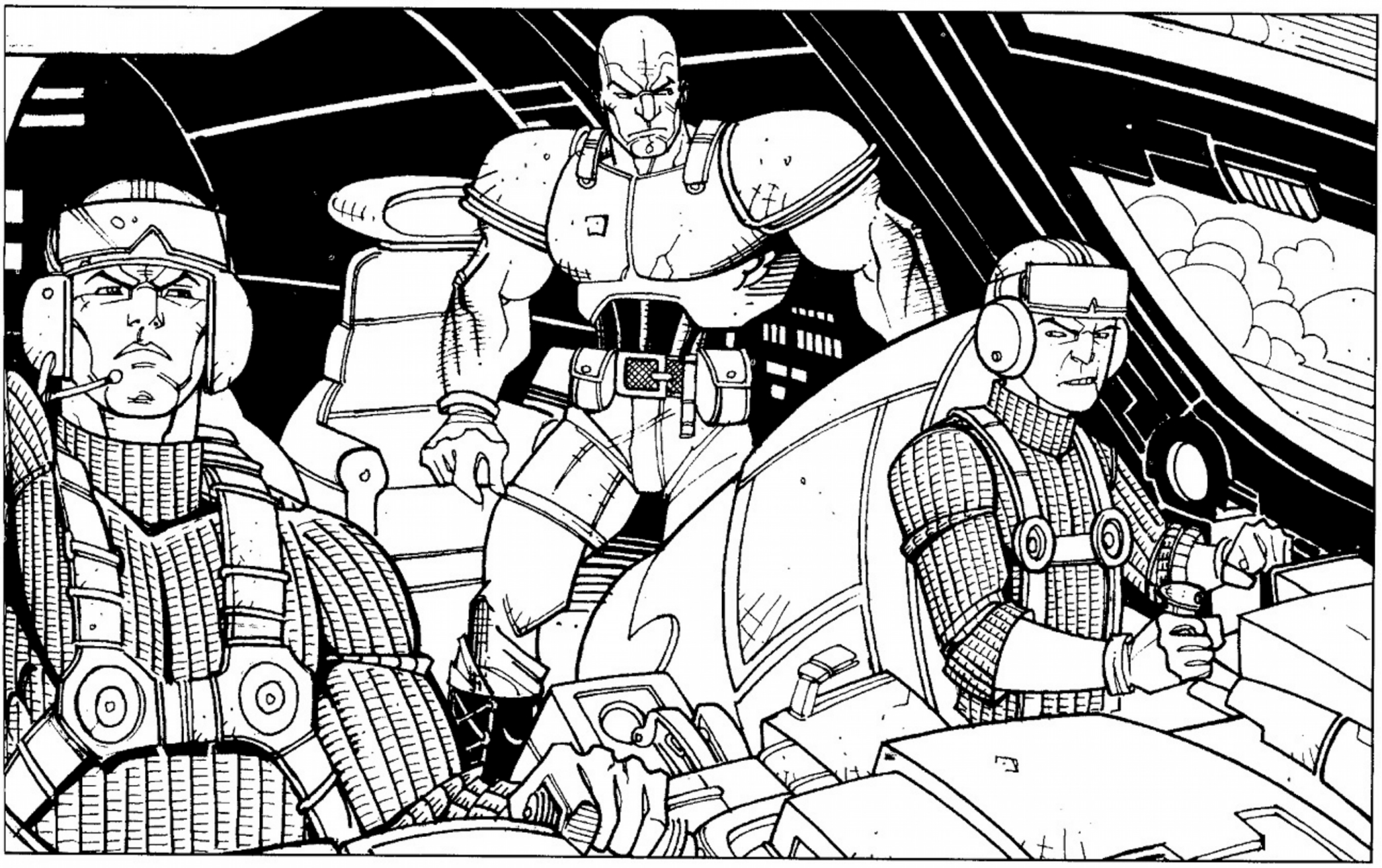
Inner Sphere Affiliation; Cannot have Transit Disorientation Syndrome Trait (TDS)

Many of the JumpShips and DropShips operating in the Inner Sphere are owned and operated by families. The children gain the unparalleled experience of a life in space and are sought after for spacecraft crews.

Attribute Minimums: RFL 4, DEX 4, INT 4
Attribute Thresholds: RFL +1, DEX +1, BOD –1
Traits: Well Equipped, G-Tolerance, Natural Aptitude/Zero-G Operations
Skills: Career/Ship Crew +2, and choose two of the following: Negotiation +1, Sensor Operations +1, Navigation/Space +1, Appraisal +1
Previous Path: Blue Collar, Clan War Orphan, Fugitives or White Collar
Next Path: Military Academy (3, must choose one of the following AITs: Aerospace Fighter Pilot, DropShip Pilot, Ship's Crew or Marine), Military Enlistment (3), Technical College (3), Naval Academy (3, p. 61), Ne'er-Do-Well (4), Travel (4)

Spacer Family Events

2 A shipboard accident almost costs you your life [Choose two: Addiction/Pain Killers, Combat Paralysis, Disabled (2), Glass Jaw, Lost Limb (2), Poor Vision]
3 A life support accident causes brain damage [Amnesia, INT –1]
4 Your family is killed by pirates [Poverty, Enemy (3), next path cannot be Travel]
5 A feud erupts between your family and the family of another ship [Combat Sense, Glass Jaw, BOD –1]
6 You are involved in a severe mis-jump [Transit Disorientation Syndrome]
7 The family wealth is gambled on a risky venture—and is lost [Poverty, next path cannot be Travel]
8 Debts force your family to join forces with an underworld group [Contact, Bad Reputation, In for Life]
9 You are exposed to a foreign virus. There is no cure! [Choose one: Unattractive, Allergy, BOD –1]
10 You become bored on the long trips and read voraciously to fill the time [Interest/Any +1]
11 You become lost in a foreign port [Streetwise +1]
12 You acquire an exotic pet and work hard to train it [Animal Handling +2]
13 Your antics earn you the nickname of "ship's monkey" [Acrobatics +1, Zero-G Operations +1]
14 You have a romantic interest in every port [Attractive, Seduction +2]
15 You learn the ins and outs of shipboard affairs [Administration +1, Bureaucracy +2]



16 You log more hours in the shuttle than most people believe possible for someone so young [Piloting/Aero +3, Tactics/Aero +1]
17 Attacked by pirates! You aid in the defense [Gunnery/Laser/Space +1, Gunnery/Missile/Space +1, Gunnery/Ballistic/Space +1]
18 Although you are young, you have seen and experienced much on your travels [Double all skill points gained from this path]
19 That high-risk contract pays off [Wealth (2), Well-Equipped (2)]
20 [Choose one event or roll twice and apply both results]

NAVAL ACADEMY (STAGE 3)

In the years since the Clan Invasion, naval power has taken on new importance, resulting in an expansion of training facilities across the Inner Sphere. The curriculum of many academies has grown beyond fighter pilots and the occasional DropShip pilot to include the crew and pilots of the rare but powerful WarShips fielded by the House militaries.

Time: 1 year
Attribute Minimums: INT 4, WIL 3, RFL 3
Attribute Thresholds: DEX +1, INT +1, WIL +1
Traits: Academic/Military History +1, Computer +2, Protocol/Affiliation +2, Sensor Operations +2
Fields: Basic Training [Naval]
Previous Path: Mercenary Brat (2), Military School (2), Preparatory School (2) , Spacer Family (2, p. 60)
Next Path: Advanced Individual Training Subpath (mandatory as part of this pass)

Naval Academy Events

2 Your training unit is selected for an "object lesson" by hostile forces [Combat Paralysis, Glass Jaw]
3 Training accident [Choose two: Poor Hearing, Poor Vision, Lost Limb (2), –1 BOD, –1 RFL]
4 Space travel is not for you [Transit Disorientation Syndrome, Zero-G Operations –2, further military career—if any—must be non-space oriented]
5 Though determined, you aren't cut out for the military life [–2 to all Basic Training/Naval Skills and may take no further military paths]
6 You are willing and eager but have difficulty remembering everything [Slow Learner]
7 Your hot-dogging style causes many problems [Demotion, Bad Reputation, Any two skills +2]
8 You do well, but a noble comrade is jealous of your success [Any Skill +2, Enemy (2)]
9 A training mishap leaves you stranded [Survival +2, Tracking +2, First Aid +1, Quirk/Agoraphobia]
10 You gain a reputation as the unit trickster [Gregarious, Fast Talk +1, Bad Reputation (2)]

11 Selected for the academy athletics team [Acrobatics +1, Good Reputation]
12 You gain a reputation as the unit "fixer" [Scrounge +2, Negotiation +2]
13 You serve as cadet-leader for your unit [Leadership +1, Tactics/Any +1]
14 You cross-train as a marine [Martial Arts/Military +2, Pistols +1, Zero-G Operations +2]
15 You make great strides in your studies, but have few friends [Introvert, Fast Learner]
16 You catch the attention of your superiors [Promotion]
17 An eventful training cruise proves you have "the right stuff" [Combat Sense, choose one: Career/Pilot or Ship's Crew +2]
18 You make a number of high-profile friends [Contact (2), Well-connected (2)]
19 You graduate with flying colors [Promotion (2), can take Naval Officer Training next, then return and continue the Life Path from the same point]
20 [Choose one event or roll twice and apply both results]

Mandatory Subpath: Advanced Individual Training

Time: 2 years
Traits: Promotion
Skills: Leadership +1, Zero-G Operations +1, add +1 to any three Basic Training Skills and +1 to any other skill
Fields: Choose one of the following fields, subject to the listed restrictions:

Aerospace Pilot Specialist (*minimum DEX 4, RFL 4, Players can select eight skills from the list, applying +5 points to one, +4 points to a second, +3 points to two, and +2 to the remaining four)*
Aerospace Pilot
Aircraft Pilot (*minimum DEX 4, RFL 3)*
Ship's Crew

Events: Do not roll events for Advanced Individual Training
Next Path: Tour of Duty (4), Naval Training (3, part of this pass)

Subpath: Naval Training

AIT graduates only.

Time: 3 years
Attribute Minimums: INT 4, DEX 4
Skills: Strategy +1, Tactics/Space +1, Leadership +1
Fields: Choose one of the following fields, subject to the listed restrictions:

DropShip Pilot Specialist (*minimum RFL 4. Players can select eight skills from the list, applying +5 points to one, +4 points to a second, +3 points to two, and +2 to the remaining three)*
DropShip Pilot
JumpShip Pilot *(DropShip Pilot Field, minimum INT 5, may not have TDS trait)*
WarShip Pilot *(DropShip Pilot or JumpShip Pilot Field, minimum INT 6, may not have TDS trait)*

Events: Do not roll events for Naval Training
Next Path: Tour of Duty (4)

Subpath: Naval Officer

By Event Roll only

Time: 1 year
Attribute Minimums: INT 5, WIL 4
Traits: Commission
Fields: Naval Officer Training
Events: Do not roll events for Naval Officer Training
Next Path: Per last path followed; add to its *Next Path* options the Tour of Duty: "Social General" path if the character has Lyran Alliance Affiliation

ADDITIONAL OCCUPATIONAL FIELDS

Basic Training (Naval)

Career/Pilot or Ship's Crew
First Aid
Navigation/Space
Shotguns
Zero-G Operations

Aerospace Pilot Specialist

Bombing
Gunnery/Ballistic/Aero
Gunnery/Laser/Aero
Gunnery/Missile/Aero
Navigation/Air
Navigation/Space
Perception
Piloting/Aero
Sensor Operations
Tactics/Air
Tactics/Air Support
Tactics/Space

DropShip Pilot Specialist

Career/Pilot
Comms/Conv.
Computers
Navigation/Air
Navigation/Space
Perception
Piloting/Aero
Piloting/Spheroid
Sensor Operations
Strategy
Tactics/Space
Zero-G Operations

Naval Officer Training

Administration
Career/Pilot or Ship's Crew
Leadership
Tactics/Any
Training
Zero-G Operations

VEHICLE ASSIGNMENT TABLES 6—AEROSPACE FIGHTERS & MILITARY DROPSHIPS

FEDERATED SUNS

2D6	Light (20–45 tons)	Medium (50–70 tons)	Heavy (75–100 tons)	DropShip (Military)
2	Centurion [30]	TR-10 Transit [50]	CHP-W7 Chippewa [90]	Vengeance[A]
3	SPR-8H Sparrowhawk [30]	F-90 Stingray [60]	Eagle [75]	Excalibur[S]
4	SPR-6D Sparrowhawk [30]	HCT-213 Hellcat [60]	CHP-W10 Chippewa [90]	Triumph[A]
5	SYD Z2A Seydlitz [20]	CSR-V12 Corsair [50]	SL-15 Slayer [80]	Overlord[S]
6	SPR-8H Sparrowhawk [30]	F-90 Stingray [60]	STU-K15 Stuka [100]	Leopard CV[A]
7	SPR-H5 Sparrowhawk [30]	CSR-V12 Corsair [50]	STU-K5 Stuka [100]	Union[S]
8	Sabre [25]	CSR-V20 Corsair [50]	STU-D6 Stuka [100]	Leopard[A]
9	SYD Z3A Seydlitz [30]	LCF-R15 Lucifer [65]	STU-K10 Stuka [100]	Seeker[S]
10	TR-7 Thrush [25]	Lightning [50]	STU-K10 Stuka [100]	Gazelle[A]
-11	SL-21 Sholagar [35]	SL-17 Shilone [65]	Thunderbird [100]	Condor[A]
12	F-10 Cheetah [25]	LCF-R20 Lucifer [65]	TR-13 Transgressor [75]	Avenger[A]

LYRAN ALLIANCE

2D6	Light (20–45 tons)	Medium (50–70 tons)	Heavy (75–100 tons)	DropShip (Military)
2	SL-21 Sholagar [35]	F-90S Stingray [60]	Eagle [75]	Claymore[A]
3	SYD Z1 Seydlitz [20]	SL-17 Shilone [65]	F-100 Riever [100]	Avenger[A]
4	SYD Z3A Seydlitz [20]	HCT-213 Hellcat [60]	CHP-W5 Chippewa [90]	Excalibur[S]
5	Sabre [25]	LCF-R16 Lucifer [65]	STU-K10 Stuka [100]	Seeker[S]
6	SYD Z3 Seydlitz [20]	LCF-R16 Lucifer [65]	CHP-W5 Chippewa [90]	Leopard CV[A]
7	SYD Z2 Seydlitz [20]	LCF-R15 Lucifer [65]	CHP-W7 Chippewa [90]	Union[S]
8	Centurion [30]	CSR-V20 Corsair [50]	CHP-W7 Chippewa [90]	Leopard[A]
9	SYD Z2A Seydlitz [20]	CSR-V12 Corsair [50]	STU-K5 Stuka [100]	Overlord[S]
10	SYD Z4 Seydlitz [20]	LCF-R20 Lucifer [65]	SL-15 Slayer [80]	Triumph[A]
11	SPR-8H Sparrowhawk [30]	Lightning [50]	EST-R3 Eisensturm [95]	Hercules[S]
12	F-10 Cheetah [25]	F-90 Stingray [60]	Thunderbird [100]	Fortress[S]

DRACONIS COMBINE

2D6	Light (20–45 tons)	Medium (50–70 tons)	Heavy (75–100 tons)	DropShip (Military)
2	S-7 Sai [40]	SL-17AC Shilone [65]	HMR-HD Hammerhead [75]	Nagumo[A]
3	RGU-133E Rogue [40]	IRN-SD1 Ironsides [65]	HMR-HD Hammerhead [75]	Achilles[A]
4	SYD Z1 Seydlitz [20]	Lightning [50]	STU-K5 Stuka [100]	Intruder[S]
5	Sabre [25]	LCF-R16KR Lucifer II [65]	F-100 Riever [100]	Excalibur[S]
6	SL-21L Sholagar [35]	LCF-R16K Lucifer II [65]	Eagle [75]	Leopard CV[A]
7	SL-21L Sholagar [35]	SL-17 Shilone [65]	SL-15 Slayer [80]	Union[S]
8	Centurion [30]	SL-17R Shilone [65]	SL-15R Slayer [80]	Leopard[A]
9	SL-21 Sholagar [35]	Lightning [50]	SL-15 Slayer [80]	Overlord[S]
10	F-10 Cheetah [25]	CSR-V12 Corsair [50]	CHP-W5 Chippewa [90]	Triumph[A]
11	S-4 Sai [40]	SL-17AC Shilone [65]	Thunderbird [100]	Condor[A]
12	SPD-502 Spad [30]	HCT-213B Hellcat II [50]	AHB-443 Ahab [90]	Okinawa[S]

CAPELLAN CONFEDERATION

2D6	Light (20–45 tons)	Medium (50–70 tons)	Heavy (75–100 tons)	DropShip (Military)
2	Sabre [25]	SL-17 Shilone [65]	Thunderbird [100]	Lung Wang[A]
3	F-11-RR Cheetah [25]	CSR-V12 Corsair [50]	F-700 Riever [100]	Avenger[A]
4	SPR-H5 Sparrowhawk [30]	Lightning [50]	TR-13A Transgressor [75]	Mule[S]
5	F-11-R Cheetah [25]	F-90 Stingray [60]	Eagle [75]	Overlord[S]
6	TR-7 Thrush [25]	TR-10 Transit [50]	TR-13 Transgressor [75]	Leopard CV[A]
7	TR-7 Thrush [25]	TR-10 Transit [50]	TR-13 Transgressor [75]	Union[S]
8	TR-7 Thrush [25]	TR-11 Transit [50]	TR-14 Transgressor [75]	Leopard[A]
9	F-10 Cheetah [25]	F-92 Stingray [60]	F-100 Riever [100]	Triumph[A]
10	SPR-H5 Sparrowhawk [30]	TR-11 Transit [50]	TR-14 Transgressor [75]	Excalibur[S]
11	Centurion [30]	HCT-213 Hellcat [60]	F-100A Riever [100]	Kuan Ti[A]
12	F-11-RR Cheetah [25]	F-94 Stingray [60]	F-100A Riever [100]	Lung Wang[A]

[A]Aerodyne, [S]Spheroid

FREE WORLDS LEAGUE

2D6	Light (20–45 tons)	Medium (50–70 tons)	Heavy (75–100 tons)	DropShip (Military)
2	SYD Z1 Seydlitz [20]	CSR-V12M Corsair [50]	Thunderbird [100]	Triumph[A]
3	Centurion [30]	HCT-213 Hellcat [60]	CHP-W5 Chippewa [90]	Intruder[S]
4	F-11-R Cheetah [25]	F-92 Stingray [60]	HMR-HD Hammerhead [75]	Hamilcar[A]
5	TR-7 Thrush [25]	F-92 Stingray [60]	F-100 Riever [100]	Fury[A]
6	F-12-S Cheetah [25]	F-90 Stingray [60]	Eagle [75]	Leopard[A]
7	F-11-RR Cheetah [25]	F-94 Stingray [60]	F-100 Riever [100]	Union[S]
8	F-14-S Cheetah [25]	F-94 Stingray [60]	F-700 Riever [100]	Leopard CV[A]
9	F-12-S Cheetah [25]	IRN-SD1 Ironsides [65]	F-100B Riever [100]	Condor[A]
10	F-10 Cheetah [25]	Lightning [50]	TR-14 Transgressor [75]	Gazelle[A]
11	F-10 Cheetah [25]	TR-11 Transit [50]	F-100A Riever [100]	Overlord[S]
12	Sabre [25]	TR-10 Transit [50]	F-100A Riever [100]	Hannibal[A]

COMSTAR

2D6	Light (20–45 tons)	Medium (50–70 tons)	Heavy (75–100 tons)	DropShip (Military)
2	RGU-133F Rogue [40]	IRN-SD1 Ironsides [65]	RPR-100 Rapier [85]	Vengeance[A]
3	ZRO-114 Zero [35]	HCT-213B Hellcat II [50]	HMR-HD Hammerhead [75]	Condor[A]
4	Sabre [25]	HCT-213B Hellcat II [50]	RPR-100 Rapier [85]	Union[S]
5	SPD-502 Spad [30]	IRN-SD1 Ironsides [65]	HMR-HD Hammerhead [75]	Overlord[S]
6	SW-606 Swift [25]	IRN-SD1 Ironsides [65]	AHB-443 Ahab [90]	Leopard CV[A]
7	TRN-3T Trident [20]	HCT-213B Hellcat II [50]	HMR-HD Hammerhead [75]	Union[S]
8	TRN-3T Trident [20]	GTHA-500 Gotha [60]	Eagle [75]	Leopard[A]
9	THK-63 Tomahawk [45]	GTHA-500 Gotha [60]	AHB-443 Ahab [90]	Fury[A]
10	THK-63 Tomahawk [45]	HCT-213B Hellcat II [50]	Eagle [75]	Triumph[A]
11	RGU-133L Rogue [40]	Lightning [50]	RPR-100 Rapier [85]	Gazelle[A]
12	RGU-133E Rogue [40]	Lightning [50]	AHB-443 Ahab [90]	Fortress[A]

WORD OF BLAKE

2D6	Light (20–45 tons)	Medium (50–70 tons)	Heavy (75–100 tons)	DropShip (Military)
2	RGU-133F Rogue [40]	F-92 Stingray [60]	RPR-100 Rapier [85]	Hamilcar[A]
3	ZRO-114 Zero [35]	F-92 Stingray [60]	F-700 Riever [100]	Condor[A]
4	ZRO-114 Zero [35]	IRN-SD1 Ironsides [65]	RPR-100 Rapier [85]	Union[S]
5	SPD-502 Spad [30]	IRN-SD1 Ironsides [65]	HMR-HD Hammerhead [75]	Overlord[S]
6	SW-606 Swift [25]	HCT-213B Hellcat II [50]	RPR-100 Rapier [85]	Leopard CV[A]
7	TRN-3T Trident [20]	HCT-213B Hellcat II [50]	HMR-HD Hammerhead [75]	Union[S]
8	THK-63 Tomahawk [45]	GTHA-500 Gotha [60]	AHB-443 Ahab [90]	Leopard[A]
9	F-12-S Cheetah [25]	F-94 Stingray [60]	AHB-443 Ahab [90]	Fury[A]
10	RGU-133E Rogue [40]	GTHA-500 Gotha [60]	F-100B Riever [100]	Triumph[A]
11	RGU-133E Rogue [40]	Lightning [50]	F-700 Riever [100]	Intruder[S]
12	THK-63 Tomahawk [45]	F-92 Stingray [60]	F-700 Riever [100]	Hannibal[A]

[A]Aerodyne, [S]Spheroid

PERIPHERY

2D6	Light (20–45 tons)	Medium (50–70 tons)	Heavy (75–100 tons)	DropShip (Military)
2	Centurion [30]	HCT-213 Hellcat [60]	F-100 Riever [100]	Overlord[S]
3	SPR-H5 Sparrowhawk [30]	LCF-R15 Lucifer [65]	SL-15 Slayer [80]	Gazelle[A]
4	F-10 Cheetah [25]	TR-10 Transit [50]	F-100 Riever [100]	Triumph[A]
5	SYD Z1 Seydlitz [20]	Lightning [50]	Thunderbird [100]	Leopard CV[A]
6	SYD Z1 Seydlitz [20]	F-90 Stingray [60]	Thunderbird [100]	Union[S]
7	Sabre [25]	Lightning [50]	CHP-W5 Chippewa [90]	Leopard[A]
8	TR-7 Thrush [25]	SL-17 Shilone [65]	STU-K5 Stuka [100]	Gazelle[A]
9	Centurion [30]	TR-10 Transit [50]	Eagle [75]	Leopard[A]
10	SL-21 Sholagar [35]	CSR-V12 Corsair [50]	TR-13 Transgressor [75]	Union[S]
11	TR-7 Thrush [25]	CSR-V12 Corsair [50]	CHP-W5 Chippewa [90]	Triumph[A]
12	F-10 Cheetah [25]	F-90 Stingray [60]	TR-13 Transgressor [75]	Overlord[S]

CLAN, FRONT LINE

2D6	Light (20–45 tons)	Medium (50–70 tons)	Heavy (75–100 tons)
2	Avar [35]	Jagatai [80]	Sabutai [75]
3	Vandal [30]	Turk [50]	Jengiz [80]
4	Batu [40]	Visigoth [60]	Scytha [90]
5	Bashkir [20]	Turk [50]	Kirghiz [100]
6	Sulla [45]	Visigoth [60]	Jengiz [80]
7	Sulla [45]	Visigoth [60]	Scytha [90]
8	Bashkir [20]	Visigoth [60]	Scytha [90]
9	Batu [40]	Turk [50]	Kirghiz [100]
10	Bashkir [20]	Visigoth [60]	Scytha [90]
11	Vandal [30]	Turk [50]	Jengiz [80]
12	Avar [35]	Jagatai [80]	Sabutai [75]

CLAN, SECOND LINE

2D6	Light (20–45 tons)	Medium (50–70 tons)	Heavy (75–100 tons)
2	S-4C Sai [40]	Turk [50]	Kirghiz [100]
3	SW-606 Swift [25]	Jagatai [80]	Jengiz [80]
4	Bashkir [20]	Jagatai [80]	Jengiz [80]
5	RGU-133E Rogue [40]	HCT-213B Hellcat II [50]	AHB-443 Ahab [90]
6	SPD-502 Spad [30]	HCT-213B Hellcat II [50]	HMR-HD Hammerhead [75]
7	TRN-3T Trident [20]	IRN-SD1 Ironsides [65]	AHB-443 Ahab [90]
8	Batu [40]	Visigoth [60]	RPR-100 Rapier [85]
9	ZRO-114 Zero [35]	GTHA-500 Gotha [60]	RPR-100 Rapier [85]
10	Sulla [45]	GTHA-500 Gotha [60]	Sabutai [75]
11	Vandal [30]	Turk [50]	Sabutai [75]
12	Avar [35]	Visigoth [60]	Scytha [90]

[A]Aerodyne, [S]Spheroid

AEROSPACE TECHNOLOGY

With the discovery of the Gray Death memory core, Inner Sphere technology began to approach the technology level of the Star League era. The Clan invasion prompted the Houses to step up their research and development efforts to create war machines capable of meeting and possibly defeating this threat. This section describes the current status of efforts to improve space capabilities.

DROPSHIPS

The term DropShip was first used in the twenty-second century to describe the huge, cargo-carrying shuttles transported by the relatively primitive JumpShips of the era. As JumpShip and DropShip technology advanced, the nature of both vehicles changed. By the time the term DropShip became official in the late twenty-fifth century, it referred to interplanetary, non-FTL craft carried on the hull of a JumpShip, rather than inside its cargo bays. These DropShips, considerably more versatile and sophisticated vessels than the huge cargo shuttles they replaced, would "drop" free of the JumpShip's docking collars upon arrival at their destination. The term shuttle remained in use, applied to the small craft with cargo capacities of one hundred tons or less carried inside DropShips and JumpShips.

The Terran registry records more than 250 different DropShip designs, many of which have long been obsolete. Approximately one hundred different models remain in service throughout the Inner Sphere, ranging from small attack craft to huge cargo transports. Twenty designs make up the majority of ships in service, grouped into the following six classes: troop carriers, BattleMech carriers, fighter carriers, assault ships, cargo carriers and passenger liners.

All DropShips are either spheroid or aerodyne designs. Spheroids, so named for their distinctively rounded hulls, rely on their fusion drives to provide lift. Aerodynes rely on wings and aerodynamic hull shapes to provide lift for atmospheric flight.

Generally smaller and more maneuverable than spheroids, the aerodyne DropShip's winged, aircraft-like design makes it ideally suited to atmospheric operations. However, the aerodynamic requirements of aerodynes limit their size and drastically increase the cost of building these sleek, graceful craft. Another disadvantage is that most aerodynes must land on a long, flat stretch of runway like conventional aircraft. This dependence on prepared landing surfaces and support makes aerodyne DropShips less versatile than spheroids. To enable aerodyne DropShips to operate both in atmosphere and in space, most aerodynes have two sets of exhaust nozzles, one set mounted on the craft's bottom and the other at its rear. Although this configuration occupies more space than a simple drive, it alleviates the problem of internal orientation. If the craft is in the atmosphere and affected by planetary gravity, it uses different exhaust nozzles for thrust, allowing the craft's nose to remain "forward" and its rear to remain "aft." Aerodynes use their bottom thrusters and transit drives for space and switch to maneuver drives and aft thrusters for atmospheric operations.

Having a simpler hull design than aerodynes, spheroid DropShips are much easier and cheaper to construct. The simplicity and sturdiness of spheroid hull design also allows the construction of much larger spheroids. The largest spheroid currently in production, the *Behemoth*, masses 100,000 tons, whereas the largest aerodyne masses 10,000 tons. Spheroids have one drive system used for both space travel and atmospheric maneuvering. The positioning of the drive at the ship's bottom, as well as the shape of the hull, allows spheroids to take off, hover and land vertically. This capability gives the Spheroid DropShip enormous versatility, but also makes it vulnerable. Because the drive thrust provides direct lift in atmosphere, steering is accomplished through a complex system of control thrusters mounted on the ship's hull. Any damage to these thrusters can severely impair the craft's handling. However, its ability to land in almost any type of terrain makes the spheroid DropShip extremely popular with the military. The largest 'Mech transport, the *Overlord* class DropShip, can deposit a battalion of 'Mechs directly onto a battlefield under almost any conditions.

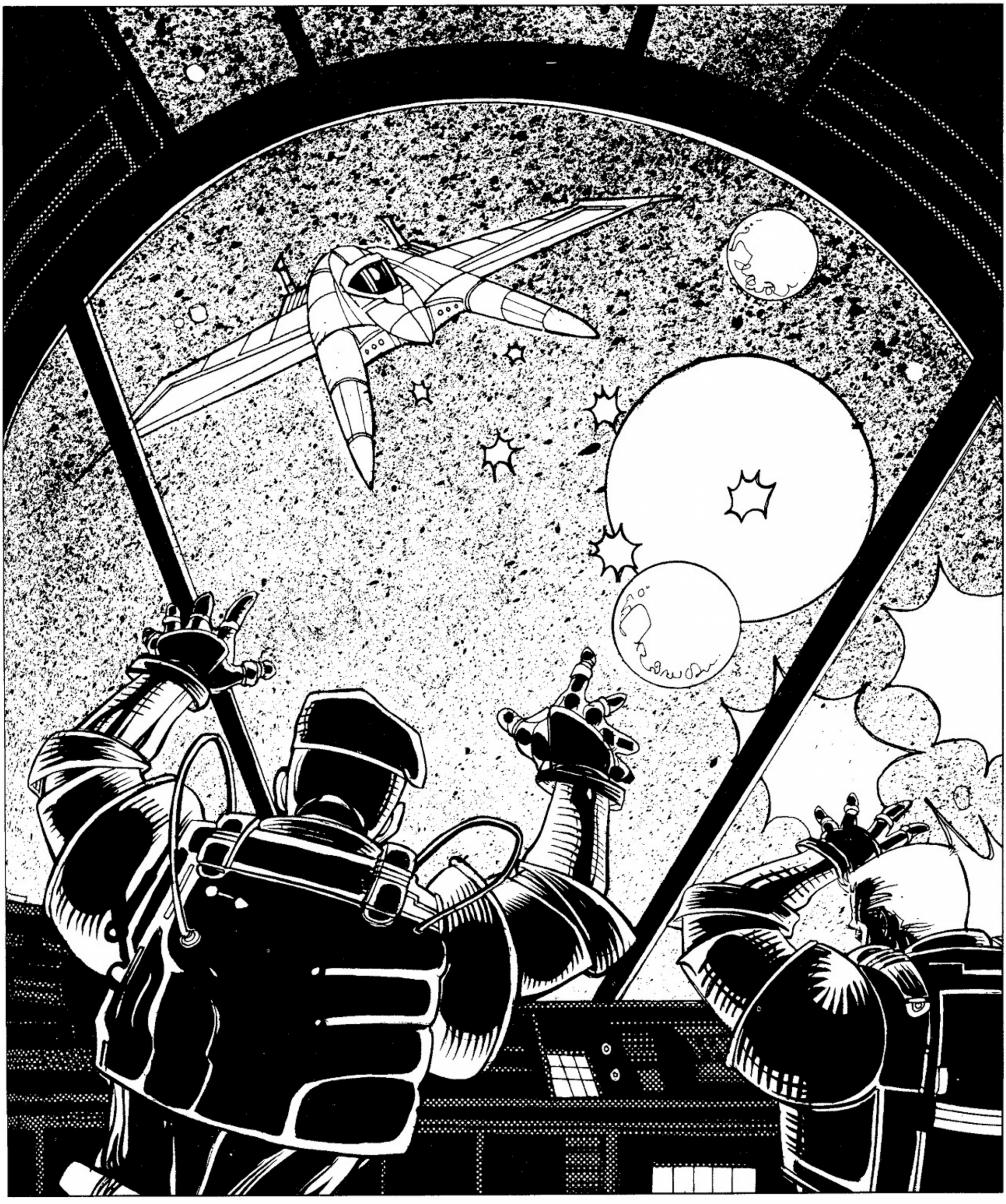
DROPSHIP SYSTEMS

Despite differences in outward design, all DropShips have a number of systems in common. The following pages identify and describe in detail the type and functions of these common systems.

Engineering Systems

Engineering systems critical to all DropShips are usually located in the engineering core of spheroid DropShips and on the bottom deck of aerodynes. Two systems comprise the heart of every ship's engineering section: an engine core that propels the ship's drives, and a fusion power plant that supplies energy to the ship's systems. Like the larger fusion core in the drive system, the power plant has both physical and magnetic shields that contain its power and protect the crew. The fusion power plant reprocesses its own by-products to produce power and generally requires little additional fuel. If necessary, however, the plant can draw upon the liquid standard diatomic hydrogen stored in large tanks located in the engineering section. This ability to adapt its use of fuel keeps the engine and power systems at top efficiency. In addition to the engine core and power plant, the engineering system has numerous cooling pipes, fusion cables, fuel lines, and plasma ducts.

The invention of the fusion engine allowed vessels to advance from the small craft of the twentieth century to the thousand-ton-plus vessels of the twenty-first and later centuries. No longer restricted by the need to use huge tanks full of chemical propellants, fusion-powered craft could accelerate steadily for several days, drastically reducing the time required to travel between worlds. The fusion engine works by expelling plasma—the by-product of the fusion reaction—through shielded exhaust nozzles on the rear or bottom of the craft. On the best-designed



DropShips, numerous small exhaust nozzles also dot the crafts' hull. The pilot uses these to alter the vessel's heading and altitude, though many craft use hardier but inefficient chemical thrusters in place of the fragile and expensive fusion jets. A magnetic containment system channels the main plasma exhaust to the drives and out the exhaust nozzles, allowing the pilot to steer the vessel and protecting the crew from harmful radiation.

Unlike the closed power plant system, the open fusion system of the ship's drive requires a constant supply of fuel. The engine core draws liquid diatomic hydrogen (H^2) fuel from large storage tanks into its reaction chamber, and the drive expels the reaction by-products to create thrust. All DropShips use at least one of two fuel flow mechanisms to feed the fusion drive.

The most common system, found on all DropShips, is a heat-expansion system that requires little maintenance. Small pumps send hydrogen into a heated chamber, where the high temperature causes it to expand. The resulting increase in pressure forces the fuel into the engine core (or the power plant, if required). This system provides a constant fuel supply, ideal for interplanetary flight—but not suited to the rapid changes in fuel demand that occur in combat.

The second fuel system, found most often on military vessels, uses high-speed pumps to supply the drive system with the constant pressure required to sustain the fusion reaction. This system allows rapid changes in thrust, giving military craft the maneuverability required in combat. However, keeping the engine system at maximum pressure wastes a considerable amount of fuel, and DropShip pilots only do so when rapid maneuvering is necessary. DropShips can revert to the heat-expansion system for interplanetary transit. Aerospace fighters, equipped solely with the fast-pump system, do not have the fuel reserves to accelerate for prolonged periods.

Weapons Systems

Most DropShips, both combat and civilian, carry weapons bays. Each bay contains radar and laser targeting systems, a cooling system, and ammunition feeds for any combination of autocannons, missiles, and particle projection cannons. The ship's fire-control computer determines the target for each bay, acting under instructions from the vessel's pilot. This system, linked to the ship's main computer and radar array, enables the DropShip to engage craft hundreds of kilometers distant while traveling at high speed. Each bay also has a local control circuit, allowing individuals in the gunnery stations situated next to each bay to control the weapons. Because a human gunner cannot easily target a unit more than a few kilometers away, or one traveling at thousands of kilometers per hour, most local controls only come into use if some emergency has shut down the main fire-control computer.

Control Systems

Each DropShip has a control room, known as a bridge. The bridge varies in size from ship to ship, from the small, functional cockpits of the *Leopard* and *Monarch* class DropShips, to the spacious decks of the *Overlord* and *Mammoth* class vessels. Each bridge contains stations for a pilot, a navigator, a communications officer, and a computer/weapons officer. Larger craft might have more than one station for each position, or additional posts for specialized crew members. For example, some vessels have separate weapons and computer officers, and others have bridge stations for a cargo officer, a docking officer (controlling the K-F boom and docking collar), a security officer, and a commander. Though the main computer performs many of the major tasks of running the ship, crew members man the appropriate stations to supervise the computer's performance and to provide manual backup in case of systems failure. By using backup computers, each station can manually operate most of the ship's systems if necessary.

Generally physically isolated from the rest of the ship, the bridge can also isolate other areas by closing the hatches designed to prevent ship-wide depressurization in the event of a hull breach. The bridge also controls the life support systems for each area of the vessel. Bridge officers can use both of these control mechanisms to great advantage if enemy forces board the craft. To prevent enemy forces from taking advantage of these systems in the event of a successful boarding, combat DropShips, and even some civilian vessels, position marines or other appropriately trained personnel at key points throughout the ship: the bridge, the engineering deck, and near any other control systems. Military craft also usually place guards at each airlock and in each cargo bay.

Cargo/Passenger Areas

All DropShips carry either passengers or cargo. Cargo facilities tend to dominate a DropShip, occupying up to 75 percent of the ship's interior. DropShips have numerous types of cargo bays. A single DropShip might have any combination of the bays listed below.

Standard cargo bays store bulk freight, usually supplies or equipment. Each bay contains numerous anchor points for securing cargo, as well as the equipment needed to maneuver the cargo both in gravity and zero-G. On most civilian craft a single door in the cargo bay provides access to the outside, while small passageways lead from the bay into the ship. The larger civilian ships, as well as many military craft, have an airlock between the cargo bay and the external door. Each bay door has a retractable ramp for loading and unloading.

'Mech bays house numerous cubicles for transporting and repairing BattleMechs. Each cubicle has a miniature gantry that allows technicians to work on the 'Mechs, either during transit or on a planet's surface. Each cubicle also contains hookups for fuel and oxygen that allow personnel to keep a BattleMech combat-ready at all times. The open area in each 'Mech bay contains additional repair facilities, as well as a number of anchor points to which a 'Mech can attach for repair. If the ship is fully loaded, additional BattleMechs can ride out the journey attached to an anchor point instead of in a cubicle. In addition, most 'Mech bays have an airlock massive enough to allow the ship to drop 'Mechs into combat, either in atmosphere or space. Each bay also has drop cocoons and storage facilities for spare parts. Like cargo bays, each 'Mech bay has a retractable ramp for loading and unloading. While the ship is on a planet,

BattleMechs enter and exit the vessel via these heavily-reinforced ramps.

Most DropShips have small craft bays. Typically, a DropShip carries one or two shuttlecraft, each stored in a cubicle during transit. In turn, each cubicle may have its own door and operating mechanisms, and the shuttlecraft pilots tend to rely on precision flying for launching and recovery.

Vessels designed to carry several fighters or small craft often group the storage/repair cubicles around one or more launch/recovery bays. On these vessels, each storage/repair cubicle has facilities similar to a 'Mech bay.

Fighter bays have appropriate launch and recovery facilities, and their increased size makes landing much easier for a pilot. The bays also have catch-nets, huge mesh barriers designed to "catch" badly damaged or out-of-control fighters and prevent them from impacting on the rear wall of the bay. The bulkheads around each bay are as thick as the DropShip's hull, providing added protection in case of accidents. Access to the rest of the vessel from the craft bay is restricted by a series of airlocks.

Most fighter bays cannot be used while a DropShip is in atmosphere or on the ground. The majority of fighter bays are designed so that fighters "drop away" from a ship moving at a constant speed and direction; launching craft under any other circumstances is very difficult, and recovery impossible. A crane must load and unload each small craft from a DropShip on a planet's surface, and each bay has one crane to perform such operations. A DropShip flying in atmosphere can launch fighters, but only at great risk; furthermore, a DropShip cannot recover fighters while operating in atmosphere.

Many pilots call the launch/recovery bays "flight decks," a term that goes back to the first seaborne carriers used in the twentieth century. Technicians and engineers assigned to each bay often refer to themselves as the deck crew, and the officer in charge has the formal title of deck officer.

JUMPSHIPS

JumpShips are the backbone of interstellar travel. These slender, needle-like craft were first developed in the twenty-second century following the rediscovery of the works of Thomas Kearny and Takayoshi Fuchida, the two visionary scientists whose research opened the door to faster-than-light space travel. A JumpShip's long, narrow Kearny-Fuchida drive system stretches from one end of the vessel to the other. A small cockpit at the ship's fore houses the command section, and the station-keeping drive rests in the aft section. The Kearny-Fuchida drive gives the craft its ability to "jump" between two points in space up to a distance of 30 light-years apart, hence the name JumpShip.

Experiments carried out in the twenty-first century by Stanford physics researchers Kearny and Fuchida showed that subatomic particles could, when exposed to a hyperspace energy field, jump between two points in space. The results suggested that by amplifying this effect, humans could achieve instantaneous interstellar transport by moving large objects—ships—through these jump points. However, the physicists' theories conflicted with the known laws of Einsteinian physics, and mainstream science disregarded them for many years. At the beginning of the twenty-second century, two independent research teams vindicated the work of Kearny and Fuchida, and paved the way for man's travels to the stars.

In the first decade of the twenty-second century, the Terran Alliance government funded the development of what became known as the Kearny-Fuchida hyperspace drive, the basic principles of which have remained unchanged since then. A field initiator in the aft end of the drive housing generates the hyperspace field and focuses it through the drive's titanium/germanium core, whose superconducting capacity boosts the field's strength and size. The resulting amplified field encompasses the JumpShip and any attached DropShips. Once fully expanded, the field pushes the craft through the jump point, a "hole" in space. The actual time spent in hyperspace depends on the distance traveled, but the stay is relatively short. The craft then emerges from the other end of the hyperspace rift through the second jump point, arriving at its destination. A malfunction of the K-F drive usually results in the craft simply arriving at a random point rather than the intended one, but there are documented cases of a JumpShip remaining trapped in hyperspace. The fate of such unlucky vessels remains unknown.

Opening holes in space takes vast amounts of energy, creating radiation signatures for both the traveling vessel and the space near it. Such radiation signatures can be detected just prior to a JumpShip's arrival or just after its departure. Opening a rift in space at the arrival point is usually a less controlled process than at the departure point. The necessary destruction of vast numbers of atomic particles creates a pulse of electromagnetic radiation that can be detected at considerable range. Using these energy traces, hostile forces can track a JumpShip and lie in wait to ambush its DropShips or any troops carried. Only the unspoken prohibition against destroying the almost irreplaceable JumpShips, in force since the end of the brutal Second Succession War, has so far saved JumpShips from becoming military targets.

JumpShips fall into two categories. The first and most numerous is the transport JumpShip, such as the *Merchant* and *Invader* class vessels. Civilian and military organizations use transport JumpShips to convey DropShips between destinations in the stars. The second category, combat JumpShips—also known as WarShips—was virtually wiped out in the first two Succession Wars. Only since the recent technological renaissance sparked by the Gray Death memory core has humankind recovered enough knowledge to build WarShips, and the pressures of the Clan Invasion have encouraged more than a few Successor States to speed up WarShip development and production. Because WarShips contain unique elements that differentiate them from standard transport JumpShips, this report considers them in a separate section.

JUMPSHIP SYSTEMS

As with DropShips, all JumpShips have the following features in common: engineering systems, weapons, control systems, grav decks, and cargo areas. The following pages describe each feature.

Engineering Systems

The heart of the JumpShip is the Kearny-Fuchida hyperspace drive. Composed of a titanium/germanium alloy suspended in a tube of liquid helium, the core of the drive acts as a huge superconductive capacitor, storing the massive amounts of energy required for a hyperspace jump. The largest component of the craft, the drive core is also the most fragile. JumpShips use one of two types of drive core: the standard variety common to transport JumpShips, and the compact cores used in some WarShips. Standard cores take up around 95 percent of the JumpShip's mass; the compact variety takes up less than 50 percent, allowing such a vessel to pack more and heavier weapons and armor. But it is much more expensive than the standard core. In the days of the Star League, shipyards could construct cores as light as 2,500 tons, but the loss of technology and knowledge over centuries of warfare shortchanged the shipbuilders of the thirty-first century. Until the discovery of the Gray Death memory core, the smallest drive built since the fall of the fall of the Star League massed 35,000 tons. With the help of the information provided by the Gray Death core, scientists are approaching the smaller drive size.

Situated at the aft end of the JumpShip is the field initiator, the second vital component of the hyperspace drive. This device generates the hyperspace field and focuses it through the main drive core, amplifying the field to encompass the JumpShip and the DropShips it carries. Generating and expanding this field takes vast amounts of energy. Though each jump lasts only a short time, it requires a fully charged drive core. Charging the core usually takes from six to eight days.

In addition to the Kearny-Fuchida drive, a JumpShip carries a massive fusion drive. Though considerably larger than similar systems carried by DropShips, this stationkeeping drive makes up a small proportion of the JumpShip's mass and therefore can only exert a few tenths of a G of acceleration. This low level makes the stationkeeping drive best suited for maintaining position at a jump point, or performing minor maneuvers near it. A huge fuel tank supplies the fusion drive with diatomic hydrogen (H^2) and allows the JumpShip to refuel docked DropShips.

A huge fusion power plant supplies the JumpShip's day-to-day electrical power requirements, allowing life support and computers to function. If necessary, this core can also quick-charge the K-F drive in as little as a few hours. However, because a shorter charging time increases the likelihood of jump failure or damage to the delicate K-F drive, such quick-charging is reserved for emergencies.

The primary means of collecting energy for the K-F drive core is the JumpShip's solar sail array. Also called a jump sail, this high-strength polymer sheet and its delicate furling mechanism are located at the aft of the vessel. Measuring from 800 to 1,500 meters in diameter, the jump sail is coated with a photochemical that absorbs almost all forms of energy and converts that energy into useful power. A sail collecting energy will not appear on radar, and is difficult to detect visually. Despite its massive diameter, the jump sail is only a few millimeters thick, making it extremely delicate. To minimize damage, the sail comprises several panels, each surrounded with a thicker frame. A JumpShip with its sail deployed cannot maneuver; if it attempts to do so, the stresses of even slight acceleration will damage the fragile polymer beyond repair.

Some Inner Sphere JumpShips, mostly those fielded by ComStar and the rare few still in good condition after hundreds of years of war, carry lithium fusion batteries. These enable ships to store an additional drive charge. This extra charge allows the vessel to make two jumps within a short period of time, while avoiding the enormous risks of quick-charging the K-F drive through the fusion reactor. However, activating the hyperspace drive too many times in rapid succession can damage or destroy vital components. Standard practice allows pilots to use the lithium fusion charge to make a hyperspace jump every three or four days, an improvement on the average, seven-day wait imposed by jump sail recharging. As with the K-F drive core, both the jump sail and the fusion reactor can charge the lithium-fusion battery, but each system can charge only one device at a time. For example, if the jump sail is charging the drive core, the lithium fusion battery must receive its energy from the fusion reactor.

Weapons Systems

Save for a few large lasers or particle projection cannons used to destroy meteors, most transport JumpShips have no weapons. The anti-meteor guns are rarely powerful enough to damage an armored spacecraft. For several centuries, only the *Invader* class carried lasers and PPCs large enough to function as offensive weapons. But with the revival of technology and the possibility of an erosion of the neutrality of JumpShips as valid military targets, many ships now contain heavier armaments—even if only for a token defense. The Clans equip all of their JumpShips with a moderate array of weapons, regardless of their intended role.

Control Systems

The ship's bridge and crew quarters are located in the bulbous nose section of most JumpShips. The bridge contains the ship's control systems, including maneuvering, hyperspace flight, and navigational systems. The bridge of a JumpShip is roughly twice the size of a DropShip bridge, with stations scattered over all the available space. It is not unusual for crew members to sit "upside down" on the ceiling, though alternative stations do exist for those few occasions when the craft is accelerating. In marked contrast to the tense feel of a DropShip bridge, the atmosphere on a JumpShip bridge tends to be relaxed and easygoing. A DropShip crew, whether military or civilian, must stay constantly alert for trouble from hostile forces or operating problems due to the complexity of flying the vessel. The crews of transport JumpShips face few such threats.

JumpShip bridges have many of the stations found on DropShips, in addition to a navigator's station. Should the navi-

gation computer fail, the navigation officer is knowledgeable enough to manually program the K-F drive. In a very select few Inner Sphere JumpShips, the standard table navigation units have been replaced by holotanks. Generally located in the center of the bridge, these holotanks are used by bridge officers to plot star charts in three dimensions and to calculate routes. Civilian Inner Sphere JumpShips rarely carry thess expensive systems, but all Clan JumpShips use this technology. Clan commanders also use the holotanks to follow the course of battles in orbit and on the ground.

Grav Deck

Most large JumpShips (100,000+ tons) carry a grav deck that provides the crew with an artificial gravity environment. This ring-shaped section produces gravity by rotating around the axis of the ship and so acts like an enormous centrifuge. As the deck spins, the centrifugal force pushes objects outward from the deck's center. The deck wall becomes the "floor," providing a sense of normal planetary gravity. While too small to hold living quarters for the entire crew, the grav deck often serves as a lounge.

Cargo Section

Though JumpShips function most often as DropShip transports, they can carry general cargo as well. The average JumpShip's cargo section masses less than 10,000 tons. Typically, this cargo capacity will be used to store supplies. In the case of exploratory missions, such supplies may prove vital to a mission's success. JumpShips are primarily designed to transport DropShips, rather than general cargo, however. Therefore, any general cargo stored in a JumpShip must be transferred to a DropShip for transport off the JumpShip.

Most JumpShips have at least one docking collar. Docking collars hold DropShips secure as a JumpShip travels through hyperspace. Docking collars are located on hardpoints along the exterior of a JumpShip's Kearny-Fuchida drive. The center of the collar assembly usually supports a number of transfer conduits that allow cargo, passengers, and fuel to move between the JumpShip and DropShips. A small docking control booth located near each collar contains control valves and switches for these connections.

WARSHIPS

Though the basic design of a WarShip matches that of a JumpShip, the larger WarShip has an additional maneuver drive, stronger armor, and powerful weapons arrays. In order to accommodate the additional hardware, these combat JumpShips use a compact but more expensive version of the K-F drive. Because the K-F drive in a WarShip must move a greater volume, it and most other components are larger than their equivalents on board a "transport" JumpShip.

Like its transport counterpart, the WarShip is built around a K-F drive. WarShip design surrounds the vulnerable drive core with various decks for personnel and equipment, shielding the whole with massive layers of armor. This extra bulk enables the vessel to resist enormous amounts of damage. The vast maneuver drives allow the WarShip to act like a slower version of a DropShip, giving it maneuverability superior to the standard JumpShip. Capable of one or two Gs of acceleration, a WarShip can travel within a solar system like a DropShip. Such interplanetary flight takes huge amounts of fuel; most WarShips consume about 40 tons of fuel per Burn Day. However, the mere presence of one such juggernaut makes most forces think twice about attacking a JumpShip or DropShip fleet.

The smaller relative mass of the compact K-F drive in relation to the overall vessel provides vast spaces on WarShips in which to fit large weapons weighing thousands of tons. Long-range and deadly, these powerful weapons can inflict inordinate amounts of damage on an enemy vessel. However, their large size makes it difficult to aim quickly and accurately, and so WarShips tend to use their weapons to engage large, slow-moving targets such as DropShips or other WarShips.

The WarShip's ability to accelerate enables it to produce ship-wide artificial gravity, removing the need for a grav deck. WarShip decks are arranged so that the nose of the craft is up, and the engine section is down. Many larger WarShips continue to carry two or three grav decks for use while in orbit or waiting at a jump point, when the vessel is not accelerating and therefore has no gravity.

Like DropShips, WarShips fall into categories determined by their role. The classifications used in this report date back more than a thousand years, to the time when navies operated on water. The terms have survived and been modified where necessary to suit the realities of warfare in space.

Corvettes are the smallest WarShips. Lightly armored and relatively swift, these craft usually mass less than half a million tons. Designed for extended operations, they most often see action as raiders or convoy escorts.

The next largest ship class, destroyers, occupy a similar niche but are more heavily armed. In addition to raiding and escort duty, destroyers often guard orbital installations. Most destroyers mass between 500,000 and 700,000 tons.

Frigates rarely mass under 700,000 tons, and serve as both picket vessels and escorts. Usually equipped with top-notch sensors, frigates often stay on the outskirts of a fleet to act as sentries, providing additional defense in the fleet's core. Unlike the smaller ship classes, frigates can also operate as transports, allowing DropShips to dock at their hardpoints.

Cruisers constitute a diverse class of ships, and many navies subdivide them into the additional categories of light cruisers, heavy cruisers, and battlecruisers. Cruisers serve as escorts, raiders, or picket vessels, offering speed comparable to frigates or destroyers, but with superior armor protection and firepower. Most cruisers can operate away from support facilities for extended periods, making them ideal as raiding vessels. Heavy cruisers carry more armaments than light cruisers, often at the expense of speed. The Clans tend to use heavy cruisers as command vessels. Battlecruisers bristle with weapons and heavy armor, but their larger engines provide enough power to give them great speed for their size. These swift behemoths often provide the knockout punch of a fleet. Most cruisers mass between 700,000 and 1.2 million tons, though historical records indicate that the Terran Hegemony constructed vessels as large as 1.5 million tons.

AEROSPACE TECHNOLOGY

The largest WarShips are battleships, multi-million-ton leviathans whose overwhelming armor and firepower have given rise to much of the mystique surrounding combat JumpShips. A vessel of this class usually serves as the flagship of a fleet, leading assaults against stubborn opposition and making a breach in enemy defenses for smaller craft to exploit. Contrary to common wisdom, a battleship's size does not imply a lack of speed. Most can keep pace with frigates, and can outrun heavy cruisers. The two-million-ton *McKenna* Class WarShip, used by the SLDF in the era of the Star League, remained the largest spacecraft ever built for just over four centuries. However, that flag is now born by the *Leviathan* class WarShip, a 2,400,000-ton ship launched by Clan Ghost Bear in 3055. Engineers around the Inner Sphere speculate whether current knowledge and technology will allow for the construction of a larger ship.

FIGHTERS

Aerospace fighters make up the bulk of Clan and Inner Sphere fleets. Massing less than one hundred tons, these swift-moving craft operate in space and atmosphere with equal ease. All have a streamlined fuselage, and use lifting surfaces to operate in atmosphere. Unlike strictly atmospheric fighters, these fusion-powered vehicles use a drive system similar to a DropShip's. Clusters of small chemical thrusters enable the fighter to maneuver in a vacuum.

A fighter's large engines give it a considerable advantage in speed and maneuverability over DropShips and JumpShips—they move too quickly for most large ships to target them. Many fighters can generate three or four Gs of thrust, and some can produce up to a mind-numbing 11 Gs. However, the pump system used by most fighters to provide fuel does not allow them to maintain high acceleration for long periods. The aerospace fighter's small size also restricts the amount of weapons and armor it can carry. All aerospace designs reflect the necessary tradeoff between firepower, protection, and speed.

Despite their many limitations, fighters are relatively inexpensive to build and maintain. When used in massed fleets, they pose a devastating threat to the largest and most well-protected spacefaring vessel.

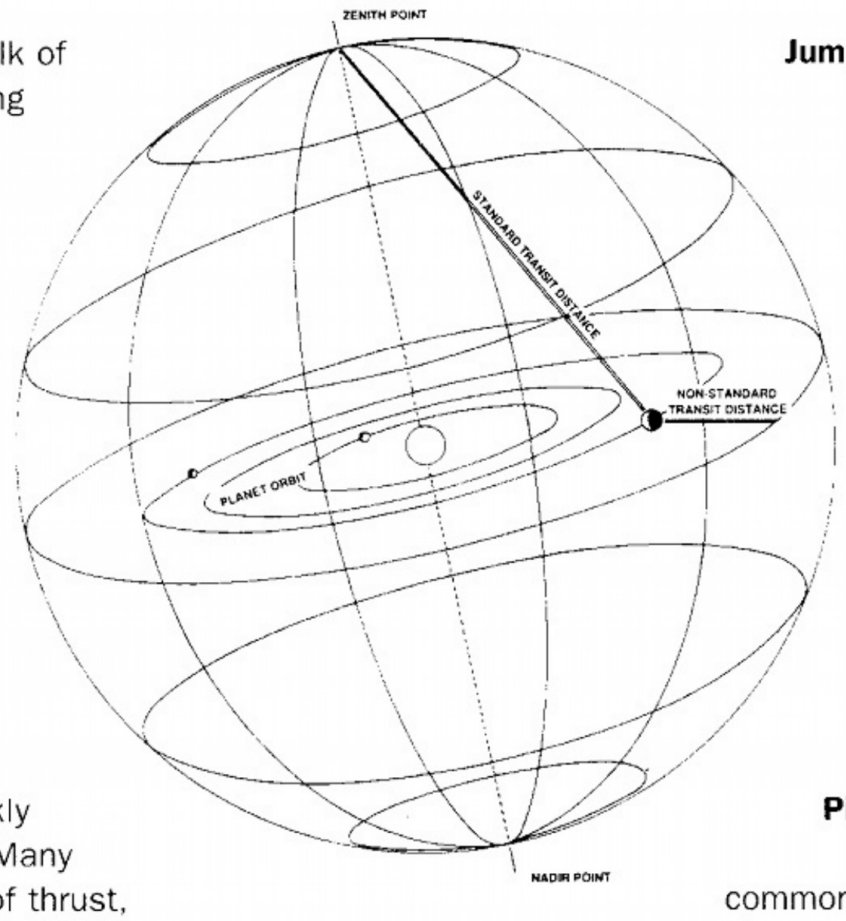
THE MECHANICS OF ASSAULT

The nature of interstellar transport in the thirty-first century creates a specific pattern for planetary assault determined by the JumpShips and DropShips.

JUMPSHIPS

The JumpShip is a key vehicle in launching a planetary assault. These large interstellar transport vessels contain a Kearny-Fuchida hyperspace jump drive (K-F drive) that allows instantaneous transportation across distances of up to 30 light-years. The K-F drive is expensive, delicate, and large, taking up roughly 95 percent of the ship's mass. It leaves little room for armor, weapons or cargo, and certainly cannot support an interplanetary drive to propel the ship from its arrival point in the planetary system to the target planet. For this job, a JumpShip carries one or more DropShips.

In the *BattleTech* universe, JumpShips are not considered military targets. Ever since the brutal Second Succession War, an unspoken ban on attacking JumpShips has preserved humankind's ability to travel across interstellar space. WarShips, of course, are an exception to this rule.



Jump Points

To make a hyperspace jump, the K-F drive creates an energy bubble around the ship that "punches a hole" through space. Because this bubble cannot form properly in the presence of a strong gravitational field, a JumpShip most often enters a planetary system through one of the system's two closest points of gravitational stability. These points are zenith or nadir of a system's gravity well, along the line that passes through the system's gravitational center and that is perpendicular to the plane of the star system (see diagram).

Pirate Points

The zenith and nadir are the most commonly used jump points, especially for civilian traffic, but are not the only options. Alternate jump points exist in a sphere around the system's star, as well as at other points of gravitational stability in the system (called LaGrange points). Unlike the zenith and nadir points, these non-standard points do not have fixed locations. The complex gravitational interaction of the system's stars, planets and other astronomical bodies means that non-standard points are constantly moving, appearing and disappearing at irregular intervals. This characteristic makes calculating such points extremely difficult. Additionally, vessels using non-standard points stand a far lower chance of being rescued in the event of a malfunction than those using standard points. For this reason, non-standard points are generally used in emergencies or by JumpShip crews seeking to conceal their arrivals in star systems, such as pirate vessels—a fact that earned non-standard jump points the nickname of pirate points.

Detection

An emerging JumpShip creates a powerful electromagnetic (EM) pulse, detectable at the target planet within hours of the jump. Though it is possible for an enemy JumpShip to avoid detection by the planet it intends to target, the means of accomplishing this feat are difficult. By learning the enemy's shipping patterns, for example, an attacking force might devise a way to knock out or delay an enemy JumpShip and send one of their own to take its place. The arriving ship, however, would need to broadcast appropriate identification codes to maintain the charade. The sheer logistical difficulty of managing all this makes such deceptions a rare tactic. Therefore, in practice, the enemy will almost always detect an arriving JumpShip and be ready to meet the invasion force head-on.

DROPSHIPS

Carried by JumpShips, DropShips transport troops and equipment from the system's jump points to the target planet. DropShips are equipped with fusion-powered interplanetary drives that propel them through space. Most DropShips are transport vessels, with their mass divided between engines and cargo. Many are also equipped with armor and weapons to defend themselves and their passengers if necessary. A large military DropShip often boasts more firepower than a company of BattleMechs. Some DropShips, known as assault ships, have little or no space for transporting troops or cargo, but are bristling with weapons intended to hunt down enemy DropShips.

After a JumpShip arrives at a jump point, the DropShips it is carrying detach from their docking collars and begin the long trip in-system. Depending on the size of the star and other factors, the trip can take hours, days, or even weeks in the case of very large stars. A typical system transit takes a week to ten days.

Upon arrival in orbit around the target planet, the DropShip lands and unloads its cargo—usually well behind friendly lines, as DropShips are expensive and can play a vital role in the event of a tactical withdrawal.

Combat Drops

Sometimes battlefield conditions call for landing troops closer to the enemy than a DropShip can feasibly manage. In these cases, a commander can call for a combat drop, a risky deployment technique made possible by the unique construction of BattleMechs and battle-armored troops. In a combat drop, rather than the DropShip landing on the planet's surface, the troops jump out of it at low altitude and fall to the surface. This tactic avoids the necessity of risking the DropShip by landing it in hazardous terrain or in the middle of enemy lines, while allowing rapid troop deployment directly to such areas. The dropped forces land safely by using jump jets or disposable jump packs to slow and guide their descent—though even with this equipment, combat drops remain extremely hazardous. Even well-trained pilots can damage their 'Mechs if they make a minor altitude miscalculation or a slightly off-balance landing. For these reasons, combat drops are used only when absolutely necessary.

Combat drops can be made from very high or orbital altitudes if the dropped forces are encased in ablative cocoons that burn away during atmospheric entry.

STANDARD CAMPAIGN TIMETABLE

The following timetable represents the standard progression of a limited military objective raid. Time intervals represent the days before and after the projected drop to the planet's surface.

D – 14 Days

The regimental assault force breaks out of hyperspace. Because it is dangerous to use the Kearny-Fuchida drive inside a star system's gravity well, the regiment's DropShips arrive more than 640 million kilometers away from the target planet. Even at full sub-light speed, the assault force will take nearly two weeks to reach its target.

D – 2 Days

The regiment arrives in orbit around the invasion target. The aerospace fighters carried aboard its DropShips launch and engage any enemy fighters in orbit. They must destroy or drive off these enemy fighters before their BattleMechs can land.

D – 1 Day

Once the defending aerospace forces have been defeated, the invasion force's surviving fighters may be sent to attack ground-based radar stations and missile batteries near the intended BattleMech regiment drop point. These installations are usually present only on heavily defended worlds, and most invasion commanders prefer not to risk their fighters in atmospheric combat.

D-Day (Drop Day)

The attacker's DropShips enter the planet's atmosphere and land on the surface. The invasion commander usually chooses a drop point several hundred kilometers away from the enemy BattleMech garrison, allowing him to organize his force and repair any minor damage sustained while landing.

D + 1 Day

The BattleMech regiment begins advancing against enemy positions. Light BattleMech units are detached to make lightning-quick raids against the planetary garrison's supply points, repair facilities, and surviving aerospace fighter bases. The rest of the regiment advances behind a screen of light and medium BattleMechs.

D + 2 Days and Beyond

The main invasion force makes contact with the defending planetary garrison. The defending BattleMechs probably will have occupied positions around water sources such as lakes, streams, and shallow rivers. The side that controls the water has an obvious tactical advantage, and most of the fighting will take place around those positions. The garrison will have to hold out for at least six weeks before it can expect to receive any reinforcements. If they are badly outnumbered, the defenders might split up into small units (usually lances) and operate as a guerrilla force, harassing the invaders but refusing to engage in pitched battles.

BATTLE VALUE TABLES

The following tables include all FASA-published conventional fighters, aerospace fighters, small craft, DropShips, JumpShips, WarShips and space stations.

The source listed indicates where to find a vessel's full description and illustration (if any).

The costs for DropShips, JumpShips, WarShips and space stations are listed in millions of C-bills.

Because some of the units on this list have very high Battle Values, it is worth repeating that unequal numbers per side have a profound effect on the balance of a battle. For example, if the Battle Values of both sides are equal, but one side outnumbers the other side, the smaller force will be at a disadvantage. A fight balanced using the Battle Values system that consists of one WarShip against scores of aerospace fighters and DropShips is virtually certain to go against the lone WarShip.

Source	Abbreviation
AeroTech 2	*AT2*
BattleTech Field Manual: Capellan Confederation	*CCAF*
BattleTech Field Manual: ComStar	*CS*
BattleTech Field Manual: Draconis Combine	*DCMS*
BattleTech Field Manual: Federated Suns	*AFFS*
BattleTech Field Manual: Free Worlds League	*FWLM*
BattleTech Field Manual: Lyran Alliance	*LAAF*
BattleTech Field Manual: Warden Clans	*Warden*
BattleTech Technical Readout: 2750 (out of print)	*2750*
BattleTech Technical Readout: 3025	*3025*
BattleTech Technical Readout: 3026	*3026*
BattleTech Technical Readout: 3055	*3055*
BattleTech Technical Readout: 3057	*3057*
Explorer Corps	*Explorer*
McCarron's Armored Cavalry (out of print)	*MAC*

CONVENTIONAL FIGHTER TABLE

Name	Battle Value	Tons	C-bill Cost	Technology Base	Source
Boeing Jump Bomber	100	20	159,060	IS/Level 1	MAC
Boomerang Spotter Plane	28	5	73,880	IS/Level 1	3025
Guardian Fighter	181	20	252,606	IS/Level 1	3026
Heavy Strike Fighter	498	45	1,649,891	IS/Level 2	AT2
Light Strike Fighter	137	5	230,965	IS/Level 1	AT2
'MechBuster	443	50	786,542	IS/Level 1	3026
Medium Strike Fighter	289	25	664,106	IS/Level 2	AT2
Planetlifter Air Transport	177	50	340,708	IS/Level 1	3026

AEROSPACE FIGHTER TABLE

Name	Battle Value	Tons	C-bill Cost	Technology Base	Source
Ahab AHB-X	1,285	90	5,788,255	IS/Level 1	2750
Ahab AHB-443	1,206	90	5,782,455	IS/Level 2	2750
Avar A	2,019	35	7,067,674	Clan/Level 2	3055
Avar B	1,822	35	6,239,299	Clan/Level 2	3055
Avar C	1,493	35	6,694,611	Clan/Level 2	3055
Avar PRIME	1,804	35	6,377,361	Clan/Level 2	3055
Bashkir A	882	20	3,493,715	Clan/Level 2	3055
Bashkir B	1,125	20	3,444,558	Clan/Level 2	3055
Bashkir C	1,476	20	3,580,340	Clan/Level 2	3055

AEROSPACE FIGHTER TABLE (CONTINUED)

Name	Battle Value	Tons	C-bill Cost	Technology Base	Source
Bashkir PRIME	1,191	20	3,594,433	Clan/Level 2	3055
Batu A	1,692	40	7,486,125	Clan/Level 2	3055
Batu B	2,233	40	6,952,125	Clan/Level 2	3055
Batu C	2,057	40	7,139,625	Clan/Level 2	3055
Batu PRIME	2,244	40	7,000,125	Clan/Level 2	3055
Centurion	722	30	1,808,433	IS/Level 1	AT2
Cheetah F-10	526	25	1,691,963	IS/Level 1	3025
Cheetah F-11-R	314	25	1,602,413	IS/Level 1	3025
Cheetah F-11-RR	534	25	3,099,563	IS/Level 2	3025
Cheetah F-12-S	389	25	1,699,613	IS/Level 1	3025
Cheetah F-14-S	451	25	3,130,838	IS/Level 2	3025
Chippewa CHP-W5	1,180	90	5,463,999	IS/Level 1	3025
Chippewa CHP-W7	1,514	90	13,184,071	IS/Level 2	3025
Chippewa CHP-W10	1,516	90	5,381,530	IS/Level 1	3025
Corsair CSR-V12	1,030	50	2,379,896	IS/Level 1	3025
Corsair CSR-V12M	1,071	50	2,296,771	IS/Level 1	3025
Corsair CSR-V20	1,010	50	2,357,396	IS/Level 1	3025
Eagle	1,336	75	4,123,109	IS/Level 1	AT2
Eisensturm EST-R3	2,567	95	17,639,710	IS/Level 2	AT2
Gotha GTHA-500	1,187	60	3,380,204	IS/Level 2	2750
Hammerhead HMR-HD	1,036	75	4,681,089	IS/Level 2	2750
Hellcat HCT-213	1,113	60	3,068,455	IS/Level 1	AT2
Hellcat II HCT-213B	1,086	50	2,993,486	IS/Level 2	2750
Ironsides IRN-SD1	1,192	65	3,992,810	IS/Level 2	2750
Jagatai A	2,425	70	13,426,734	Clan/Level 2	3055
Jagatai B	2,659	70	12,974,484	Clan/Level 2	3055
Jagatai C	2,164	70	13,826,672	Clan/Level 2	3055
Jagatai PRIME	2,571	70	13,357,547	Clan/Level 2	3055
Jengiz A	2,844	80	13,725,935	Clan/Level 2	3055
Jengiz B	2,984	80	14,772,435	Clan/Level 2	3055
Jengiz C	2,172	80	14,957,935	Clan/Level 2	3055
Jengiz PRIME	2,405	80	14,555,435	Clan/Level 2	3055
Kirghiz A	2,977	100	21,059,766	Clan/Level 2	3055
Kirghiz B	3,512	100	22,124,766	Clan/Level 2	3055
Kirghiz C	2,748	100	21,138,516	Clan/Level 2	3055
Kirghiz PRIME	3,211	100	21,292,266	Clan/Level 2	3055
Lightning	948	50	2,506,771	IS/Level 1	AT2
Lucifer II LCF-R16K	995	65	3,510,576	IS/Level 1	3025
Lucifer II LCF-R16KR	1,338	65	8,559,718	IS/Level 2	3025
Lucifer LCF-R15	1,108	65	3,235,186	IS/Level 1	3025
Lucifer LCF-R16	1,508	65	4,009,519	IS/Level 2	3025
Lucifer LCF-R20	1,477	65	2,944,183	IS/Level 1	3025
Rapier RPR-100	1,413	85	5,588,518	IS/Level 2	2750
Riever F-100	1,427	100	6,275,250	IS/Level 1	3025
Riever F-100A	1,405	100	6,315,750	IS/Level 1	3025
Riever F-100B	1,337	100	5,984,250	IS/Level 1	3025
Riever F-700	1,576	100	19,361,875	IS/Level 2	3025
Riever F-700A	1,816	100	16,491,750	IS/Level 2	3025

AEROSPACE FIGHTER TABLE (CONTINUED)

Name	Battle Value	Tons	C-bill Cost	Technology Base	Source
Rogue RGU-133E	836	40	2,317,984	IS/Level 2	2750
Rogue RGU-133F	638	40	2,339,584	IS/Level 2	2750
Rogue RGU-133L	831	40	2,080,384	IS/Level 2	2750
Sabre	632	25	1,638,984	IS/Level 1	AT2
Sabutai A	2,100	75	15,682,333	Clan/Level 2	3055
Sabutai B	2,737	75	15,947,880	Clan/Level 2	3055
Sabutai C	2,996	75	14,770,536	Clan/Level 2	3055
Sabutai PRIME	2,858	75	14,712,958	Clan/Level 2	3055
Sai S-4	1,081	40	5,035,091	IS/Level 2	AT2
Sai S-4C	1,813	40	5,229,580	Clan/Level 2	AT2
Sai S-7	1,072	40	4,737,731	IS/Level 2	AT2
Scytha A	2,864	90	22,039,683	Clan/Level 2	3055
Scytha B	3,058	90	20,502,683	Clan/Level 2	3055
Scytha C	3,378	90	20,872,886	Clan/Level 2	3055
Scytha PRIME	2,883	90	21,518,136	Clan/Level 2	3055
Seydlitz SYD Z1	508	20	1,385,505	IS/Level 1	3025
Seydlitz SYD Z2	640	20	1,495,505	IS/Level 1	3025
Seydlitz SYD Z2A	878	20	2,415,133	IS/Level 2	3025
Seydlitz SYD Z3	552	20	1,408,880	IS/Level 1	3025
Seydlitz SYD Z3A	558	20	2,317,508	IS/Level 2	3025
Seydlitz SYD Z4	724	20	2,415,133	IS/Level 2	3025
Shilone SL-17	1,173	65	3,480,201	IS/Level 1	3025
Shilone SL-17AC	991	65	3,167,501	IS/Level 1	3025
Shilone SL-17R	1,340	65	3,586,201	IS/Level 2	3025
Sholagar SL-21	654	35	2,093,478	IS/Level 1	3025
Sholagar SL-21L	734	35	2,087,603	IS/Level 1	3025
Slayer SL-15	1,303	80	4,550,303	IS/Level 1	3025
Slayer SL-15A	1,267	80	4,770,103	IS/Level 1	3025
Slayer SL-15B	1,267	80	4,770,103	IS/Level 1	3025
Slayer SL-15C	1,267	80	4,770,103	IS/Level 1	3025
Slayer SL-15R	1,377	80	4,863,903	IS/Level 2	3025
Spad SPD-502	729	30	1,582,026	IS/Level 1	2750
Sparrowhawk SPR-6D	704	30	3,623,584	IS/Level 2	3025
Sparrowhawk SPR-8H	523	30	1,727,358	IS/Level 1	3025
Sparrowhawk SPR-H5	675	30	1,783,995	IS/Level 1	3025
Sparrowhawk SPR-H5K	558	30	1,743,745	IS/Level 1	3025
Stingray F-90	1,129	60	3,060,330	IS/Level 1	3025
Stingray F-90S	1,065	60	2,949,830	IS/Level 1	3025
Stingray F-92	1,459	60	3,554,330	IS/Level 2	3025
Stingray F-94	1,118	60	3,151,330	IS/Level 2	3025
Stuka STU-D6	1,862	100	16,100,625	IS/Level 2	3025
Stuka STU-K5	1,561	100	6,266,625	IS/Level 1	3025
Stuka STU-K10	1,595	100	6,284,625	IS/Level 1	3025
Stuka STU-K15	1,408	100	6,391,500	IS/Level 1	3025
Sulla A	1,941	45	8,712,927	Clan/Level 2	3055
Sulla B	1,907	45	8,760,779	Clan/Level 2	3055
Sulla C	2,271	45	8,592,341	Clan/Level 2	3055

AEROSPACE FIGHTER TABLE (CONTINUED)

Name	Battle Value	Tons	C-bill Cost	Technology Base	Source
Sulla PRIME	2,105	45	8,653,591	Clan/Level 2	3055
Swift SW-606	430	25	1,778,992	IS/Level 2	2750
Thrush TR-7	566	25	1,702,734	IS/Level 1	3025
Thunderbird	1,551	100	6,538,313	IS/Level 1	AT2
Tomahawk THK-53	1,191	45	3,430,880	IS/Level 2	2750
Tomahawk THK-63	1,094	45	2,658,211	IS/Level 2	2750
Transgressor AC TR-14	1,250	75	4,134,281	IS/Level 1	3025
Transgressor TR-13	1,333	75	4,120,531	IS/Level 1	3025
Transgressor TR-13A	1,714	75	4,670,531	IS/Level 2	3025
Transit TR-10	1,150	50	2,506,771	IS/Level 1	3025
Transit TR-11	978	50	2,306,771	IS/Level 1	3025
Trident TRN-3T	597	20	1,554,254	IS/Level 2	2750
Turk A	2,012	50	8,280,599	Clan/Level 2	3055
Turk B	1,775	50	8,280,599	Clan/Level 2	3055
Turk C	1,984	50	8,849,349	Clan/Level 2	3055
Turk PRIME	2,293	50	8,514,974	Clan/Level 2	3055
Vandal A	975	30	6,040,591	Clan/Level 2	3055
Vandal B	992	30	6,019,028	Clan/Level 2	3055
Vandal C	1,409	30	6,266,997	Clan/Level 2	3055
Vandal PRIME	651	30	6,242,128	Clan/Level 2	3055
Visigoth A	2,689	60	12,046,829	Clan/Level 2	3055
Visigoth B	2,346	60	10,925,579	Clan/Level 2	3055
Visigoth C	2,313	60	11,058,829	Clan/Level 2	3055
Visigoth PRIME	2,141	60	11,731,579	Clan/Level 2	3055
Zero ZRO-114	767	35	1,651,482	IS/Level 1	2750

SMALL CRAFT TABLE

Name	Battle Value	Tons	C-bill Cost	Technology Base	Source
"Battle Taxi" NL-42	957	200	5,683,500	IS/Level 2	3057
Bus S-7A	88	100	1,686,600	IS/Level 1	3057
Bus S-7AC	108	100	1,684,800	Clan/Level 2	3057
DropShuttle K-1	585	200	3,561,500	IS/Level 1	3057
DropShuttle K-1C	1,006	200	3,677,600	Clan/Level 2	3057
Landing Craft Mark VII	626	150	2,936,238	IS/Level 1	3057
Landing Craft Mark VII-C	1,079	150	3,174,850	Clan/Level 2	3057
Long-Range Shuttlecraft KR-61	362	100	1,909,500	IS/Level 1	3057
Long-Range Shuttlecraft KR-61C	442	100	1,907,100	Clan/Level 2	3057
Shuttle ST-46	171	100	1,713,000	IS/Level 1	3057
Shuttle ST-46C	211	100	1,710,600	Clan/Level 2	3057

DROPSHIP TABLE

Name	Battle Value	Tons	C-bill Cost (in millions)	Technology Base	Source
Achilles (Obsolete Version)	6,744	4,500	350	IS/Level 1	3057
Achilles (Upgraded Version)	9,267	4,500	425	IS/Level 2	3057
Avenger (Obsolete Version)	4,308	1,400	70	IS/Level 1	3057
Avenger (Upgraded Version)	6,533	1,400	120	IS/Level 2	3057
Behemoth	1,798	100,000	2,000	IS/Level 1	3057
Broadsword	5,595	1,850	272	Clan/Level 2	3057
Buccaneer	1,012	3,500	100	IS/Level 1	3057
Carrier	8,251	5,000	548	Clan/Level 2	3057
Claymore	3,951	1,400	130	IS/Level 2	3057
Condor (Obsolete Version)	2,505	4,500	300	IS/Level 1	3057
Condor (Upgraded Version)	2,552	4,500	325	IS/Level 2	3057
Confederate	2,960	1,860	148	IS/Level 2	3057
Excalibur (Obsolete Version)	3,094	16,000	750	IS/Level 1	3057
Excalibur (Upgraded Version)	3,313	16,000	792	IS/Level 2	3057
Fortress (Obsolete Version)	4,317	6,000	800	IS/Level 1	3057
Fortress (Upgraded Version)	5,804	6,000	920	IS/Level 2	3057
Fury (Obsolete Version)	2,155	1,850	30	IS/Level 1	3057
Fury (Upgraded Version)	2,330	1,850	33	IS/Level 2	3057
Gazelle (Obsolete Version)	2,327	1,903	40	IS/Level 1	3057
Gazelle (Upgraded Version)	2,285	2,400	45	IS/Level 2	3057
Hamilcar	3,724	3,575	190	IS/Level 2	3057
Hannibal	5,219	4,850	360	IS/Level 2	3057
Hercules	3,881	7,250	640	IS/Level 2	3057
Intruder (Obsolete Version)	5,125	3,000	200	IS/Level 1	3057
Intruder (Upgraded Version)	6,533	3,000	240	IS/Level 2	3057
Kuan Ti	3,986	2,200	280	IS/Level 2	3057
Leopard (Obsolete Version)	2,565	1,720	60	IS/Level 1	3057
Leopard (Upgraded Version)	3,211	1,800	75	IS/Level 2	3057
Leopard CV (Obsolete Version)	2,565	1,720	60	IS/Level 1	3057
Leopard CV (Upgraded Version)	3,211	1,800	85	IS/Level 2	3057
Lion	7,303	7,215	712	Clan/Level 2	3057
Lion (Dragoons Variant Version)	7,303	7,215	544	Clan/Level 2	3057
Lung Wang	5,637	2,550	310	IS/Level 2	3057
Mammoth	1,390	52,000	1,200	IS/Level 1	3057
Miraborg	10,809	9,750	508	Clan/Level 2	3057
Model 97 "Octopus"	3,716	15,000	820	IS/Level 2	3057
Monarch	441	5,000	200	IS/Level 1	3057
Mule	1,658	11,200	300	IS/Level 1	3057
Nagumo	3,767	4,200	240	IS/Level 2	3057
Noruff	11,603	1,900	504	Clan/Level 2	3057
Okinawa	3,714	4,500	410	IS/Level 2	3057
Overlord (Obsolete Version)	4,164	9,700	430	IS/Level 1	3057
Overlord (Upgraded Version)	4,892	9,700	475	IS/Level 2	3057
Overlord-C	8,836	11,550	440	Clan/Level 2	3057
Rose	3,843	16,000	460	IS/Level 2	3057
Sassanid	7,733	3,000	312	Clan/Level 2	3057
Seeker (Obsolete Version)	2,417	3,700	100	IS/Level 1	3057
Seeker (Upgraded Version)	2,618	3,700	115	IS/Level 2	3057

DROPSHIP TABLE (CONTINUED)

Name	Battle Value	Tons	C-bill Cost (in millions)	Technology Base	Source
Titan	6,808	12,000	555	Clan/Level 2	3057
Triumph (Obsolete Version)	2,732	5,600	450	IS/Level 1	3057
Triumph (Upgraded Version)	3,143	6,000	480	IS/Level 2	3057
Union (Obsolete Version)	3,250	3,500	160	IS/Level 1	3057
Union (Upgraded Version)	5,085	3,500	185	IS/Level 2	3057
Union-C	7,875	4,700	293	Clan/Level 2	3057
Vengeance (Obsolete Version)	4,095	10,000	350	IS/Level 1	3057
Vengeance (Upgraded Version)	4,449	11,000	390	IS/Level 2	3057

JUMPSHIP TABLE

Name	Battle Value	Tons	C-bill Cost (in millions)	Technology Base	Source
Chimeisho	1,514	245,000	1,140	IS/Level 2	3057
Comitatus	6,705	250,000	315	Clan/Level 2	3057
Hunter	1,915	95,000	280	Clan/Level 2	3057
Hunter (LF Battery Variant)	1,915	95,000	825	Clan/Level 2	3057
Invader (Large Laser Variant)	669	152,000	500	IS/Level 1	3057
Invader (PPC Variant)	715	152,000	500	IS/Level 1	3057
Magellan	2,930	175,000	832	IS/Level 2	3057
Merchant	496	120,000	400	IS/Level 1	3057
Monolith	1,035	380,000	1,000	IS/Level 1	3057
Odyssey	4,469	345,000	1,771	Clan/Level 2	3057
Scout	560	90,000	300	IS/Level 1	3057
Star Lord	604	274,000	750	IS/Level 1	3057
Tramp	1,757	250,000	770	IS/Level 2	3057
Tramp (LF Battery Variant)	1,757	250,000	1,449	Clan/Level 2	3057

WARSHIP TABLE

Name	Battle Value	Tons	C-bill Cost (in millions)	Technology Base	Source
Aegis	163,469	745,000	15,020	Clan/Level 2	3057
Agamemnon	199,223	815,000	15,154	IS/Level 2	FWLM
Avalon	162,770	770,000	19,977	IS/Level 2	AFFC
Black Lion	244,744	802,000	15,168	Clan/Level 2	3057
Cameron	133,426	859,000	9,866	Clan/Level 2	3057
Carrack	33,634	300,000	3,256	Clan/Level 2	Explorer
Congress	98,106	760,000	9,661	Clan/Level 2	3057
Conqueror	154,898	780,000	12,627	Clan/Level 2	Warden
Dante	103,141	610,000	10,111	IS/Level 2	CS
Eagle	131,084	625,000	14,729	IS/Level 2	FWLM
Essex	61,908	612,000	4,684	Clan/Level 2	3057
Faslane	19,222	550,000	24,325	IS/Level 3	Explorer
Feng Huang	98,828	970,000	19,500	IS/Level 2	CCAF
Fox	35,737	235,000	16,430	IS/Level 2	3057
Fredasa	39,007	175,000	6,826	Clan/Level 2	3057
Impavido	52,285	485,000	9,599	IS/Level 2	3057
Inazuma	45,107	198,000	11,715	IS/Level 2	DCMS
Kirishima	92,373	790,000	12,858	IS/Level 2	3057

WARSHIP TABLE (CONTINUED)

Name	Battle Value	Tons	C-bill Cost (in millions)	Technology Base	Source
Kyushu	67,538	625,000	14,871	IS/Level 2	3057
Leviathan	124,346	2,400,000	30,205	Clan/Level 2	Warden
Liberator	75,140	830,000	20,300	Clan/Level 2	3057
Lola III	58,482	678,000	4,726	Clan/Level 2	3057
McKenna	214,650	1,930,000	21,378	Clan/Level 2	3057
Mjolnir	176,566	1,250,000	8,424	IS/Level 3	LAAF
Nightlord	187,009	1,200,000	15,730	Clan/Level 2	3057
Potemkin	95,039	1,508,000	65,572	Clan/Level 2	3057
Sovetskii Soyuz	90,587	823,000	16,837	Clan/Level 2	3057
Suffren	44,811	540,000	14,578	IS/Level 2	3057
Tatsumaki	62,261	514,000	9,823	IS/Level 2	DCMS
Texas	132,561	1,560,000	20,287	Clan/Level 2	3057
Thera	224,380	960,000	15,830	IS/Level 2	FWLM
Vincent Mk 42	20,939	412,000	4,439	Clan/Level 2	3057
Volga	62,162	775,000	14,775	Clan/Level 2	3057
Whirlwind	66,863	520,000	4,971	Clan/Level 2	3057
York	61,442	595,000	9,822	Clan/Level 2	3057
Zechetinu	42,496	180,000	6,791	IS/Level 2	FWLM
Zechetinu II	47,479	180,000	6,791	IS/Level 2	FWLM

SPACE STATION TABLE

Name	Battle Value	Tons	C-bill Cost (in millions)	Technology Base	Source
Bastion Class (SDS)	9,608	150,000	3,184	IS/Level 1	3057
Battlesat (SDS)	1,088	1,375	13	IS/Level 3	3057
Capitol Class (SDS)	10,468	30,000	313	IS/Level 2	3057
Large Habitat	1,342	500,000	1,450	IS/Level 2	3057
Large Pressurized Yard	931	42,000	17,525	IS/Level 2	3057
Large Unpressurized Yard	963	30,000	15,028	IS/Level 2	3057
Medium/Large Factory	930	17,000	47	IS/Level 2	3057
Olympus (Recharge Station)	11,192	1,000,000	13,005	IS/Level 2	3057
Small Factory	1,051	2,500	35	IS/Level 2	3057
Small Habitat	1,418	120,000	391	IS/Level 2	3057
Small Pressurized Yard	516	2,500	507	IS/Level 2	3057
Small Unpressurized Yard	572	3,000	508	IS/Level 2	3057

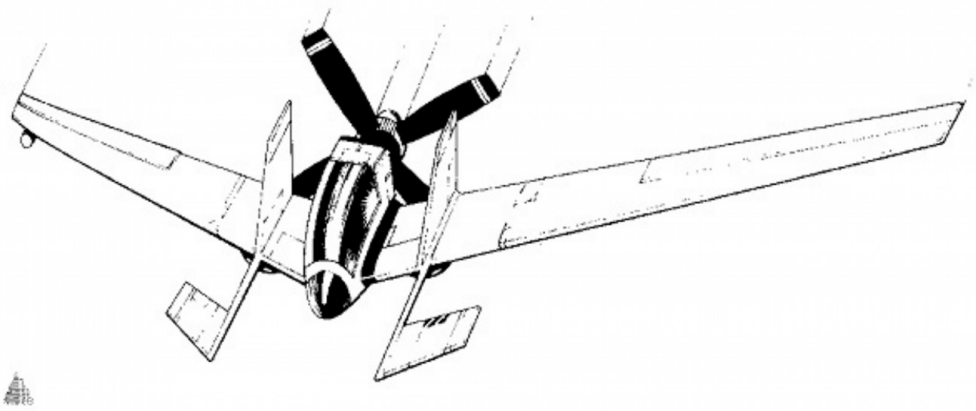
FIGHTER GAME STATISTICS

The following statistics contain all the information needed to use existing *BattleTech* fighters in *AeroTech 2*. The armor listing for each fighter is presented as X/Y/Z. The first number is the nose armor for the unit, the second represents each wing, and the final number the aft armor.

In most cases, a single value indicates the number of heat sinks for each fighter. Fighters equipped with double heat sinks have two values in the Heat Sinks line, presented as X (Y). The first value is the actual number of heat sinks on the fighter, while the second is the effective number of heat sinks.

The weapons statistics represent the values for a single weapon, even when more than one weapon of the same type is indicated in an arc. For example, a *Corsair* has two small lasers in the nose, but Heat 1, SRV 3 represents a single weapon. Make a separate to-hit roll for each weapon.

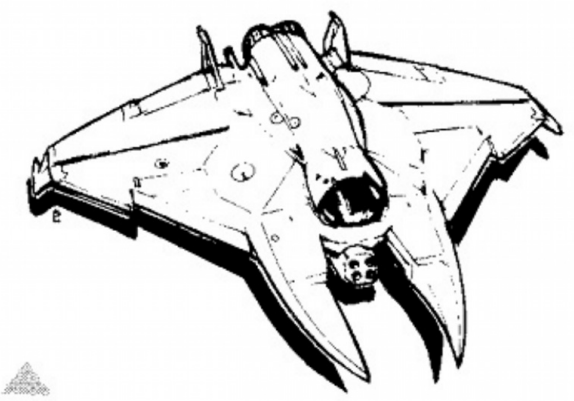
CONVENTIONAL FIGHTERS



BOOMERANG SPOTTER PLANE

Type: Conventional Fighter
Tech: Inner Sphere (Turbine)
Safe Thrust: 9
Max Thrust: 14
Armor: 0/0/0
Mass: 5 tons
Fuel: 2 tons (320 points)
Heat Sinks: 0
SI: 9

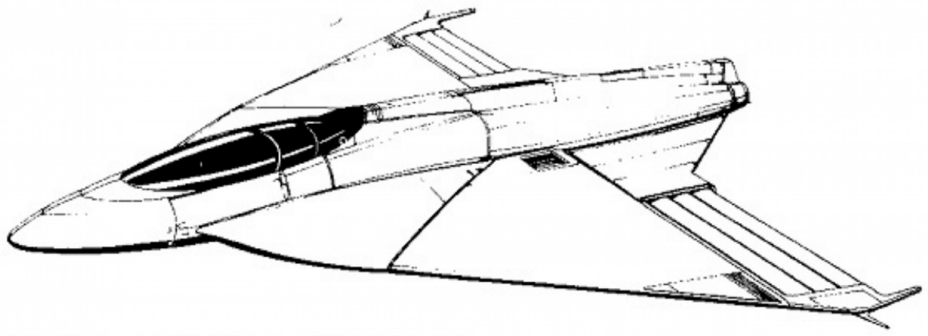
Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Recon Camera	Nose	—	—	—	—	—



LIGHT STRIKE FIGHTER

Type: Conventional Fighter
Tech: Inner Sphere (Fusion)
Safe Thrust: 10
Max Thrust: 15
Armor: 2/2/2
Mass: 10 tons
Fuel: 1 ton (160 points)
Heat Sinks: 0
SI: 10

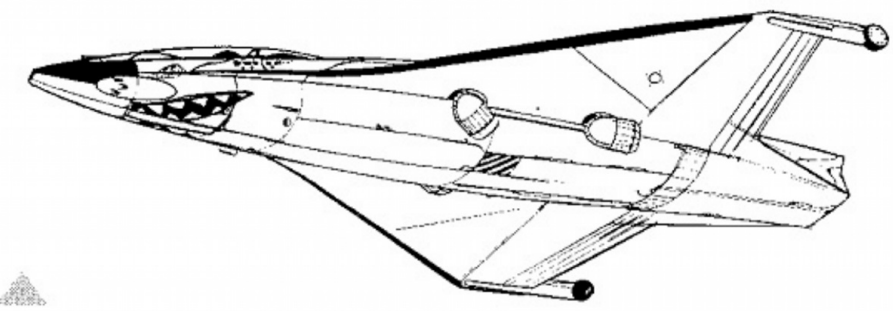
Weapons	Loc	Heat	SRV	MRV	LRV	ERV
SRM 4	Nose	3	6	—	—	—
Ammo (SRM) 25						



BOEING JUMP BOMBER

Type: Conventional Fighter
Tech: Inner Sphere (Turbine)
Safe Thrust: 9
Max Thrust: 14
Armor: 9/3/3
Mass: 20 tons
Fuel: 2 tons (320 points)
Heat Sinks: 0
SI: 9

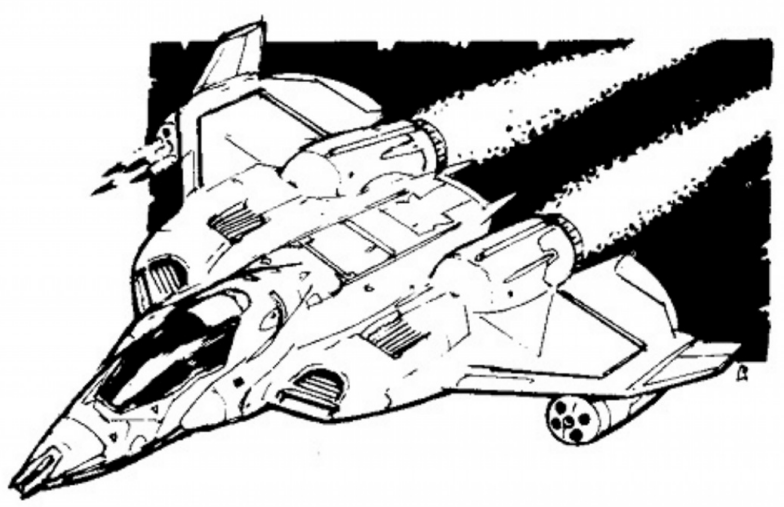
Weapons	*Loc*	*Heat*	*SRV*	*MRV*	*LRV*	*ERV*
—	—	—	—	—	—	—



GUARDIAN FIGHTER

Type: Conventional Fighter
Tech: Inner Sphere (Turbine)
Safe Thrust: 7
Max Thrust: 11
Armor: 7/3/4
Mass: 20 tons
Fuel: 2 tons (320 points)
Heat Sinks: 0
SI: 7

Weapons	*Loc*	*Heat*	*SRV*	*MRV*	*LRV*	*ERV*
SRM 6	*Nose*	*4*	*8*	—	—	—
Ammo (SRM) 15						

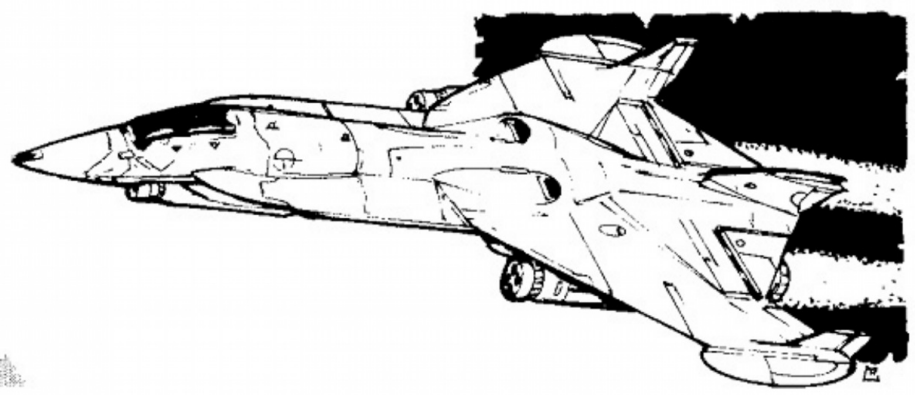


MEDIUM STRIKE FIGHTER

Type: Conventional Fighter
Tech: Inner Sphere (Fusion)
Safe Thrust: 7
Max Thrust: 11
Armor: 7/6/5
Mass: 25 tons
Fuel: 2 tons (320 points)
Heat Sinks: 0
SI: 7

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
LRM 5+Artemis	RW	2	4	4	4	—
LRM 5+Artemis	LW	2	4	4	4	—
Ammo (LRM) 24						

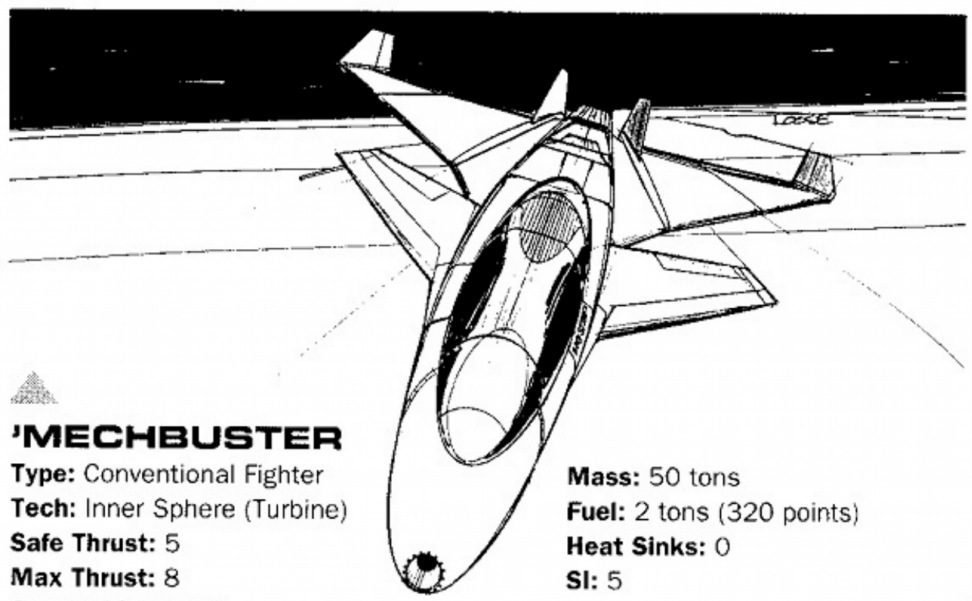
FIGHTER GAME STATISTICS



HEAVY STRIKE FIGHTER

Type: Conventional Fighter
Tech: Inner Sphere (Fusion)
Safe Thrust: 5
Max Thrust: 8
Armor: 12/10/8
Mass: 45 tons
Fuel: 2 tons (320 points)
Heat Sinks: 0
SI: 5

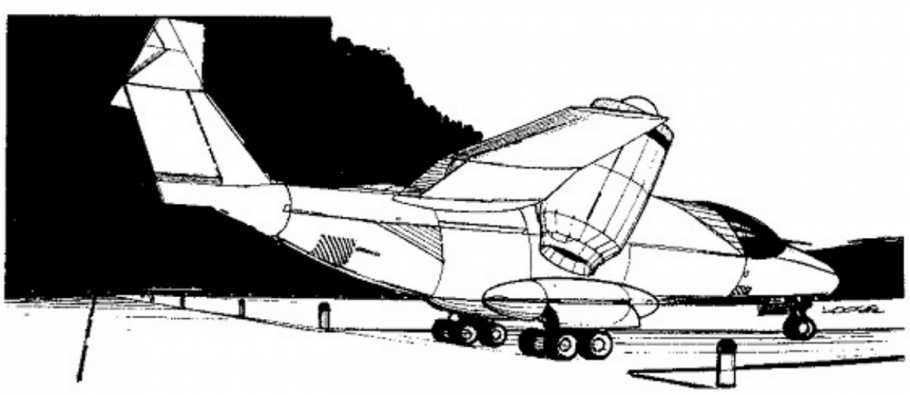
Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Light Gauss	Nose	1	8	8	8	8
Ammo (Gauss) 16						
Streak SRM 4	RW	3	8	—	—	—
Streak SRM 4	LW	3	8	—	—	—
Ammo (Streak) 50						



'MECHBUSTER

Type: Conventional Fighter
Tech: Inner Sphere (Turbine)
Safe Thrust: 5
Max Thrust: 8
Armor: 20/10/12
Mass: 50 tons
Fuel: 2 tons (320 points)
Heat Sinks: 0
SI: 5

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
AC/20	Nose	7	20	—	—	—
Ammo (AC) 5						

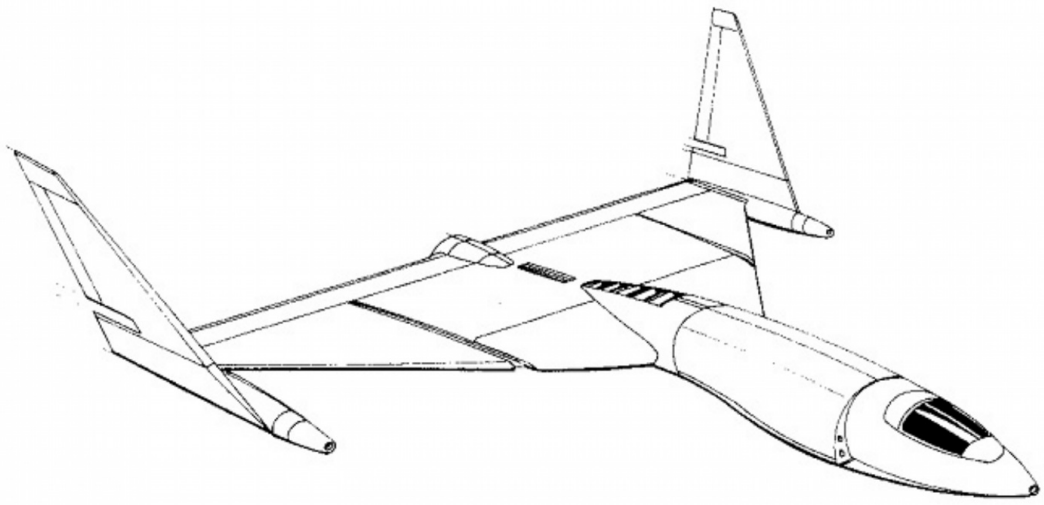


PLANETLIFTER AIR TRANSPORT

Type: Conventional Fighter
Tech: Inner Sphere (Turbine)
Safe Thrust: 4
Max Thrust: 6
Armor: 23/7/13
Mass: 50 tons
Fuel: 2 tons (320 points)
Heat Sinks: 0
SI: 5

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Cargo (20 Tons)						

LIGHT AEROSPACE FIGHTERS



BASHKIR

Type: Aerospace Fighter
Tech: Clan OmniFighter
Safe Thrust: 13
Max Thrust: 20
Armor: 29/17/17
Mass: 20 tons
Fuel: 3 tons (240 points)
Heat Sinks: 11 (22)
SI: 13

Primary Configuration

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
ER Small Laser	Nose	2	5	—	—	—
Streak SRM 2	Nose	2	4	4	—	—
Ammo (Streak) 50						
ER Medium Laser	RW	5	7	7	—	—
ER Medium Laser	LW	5	7	7	—	—

Alternate Configuration A

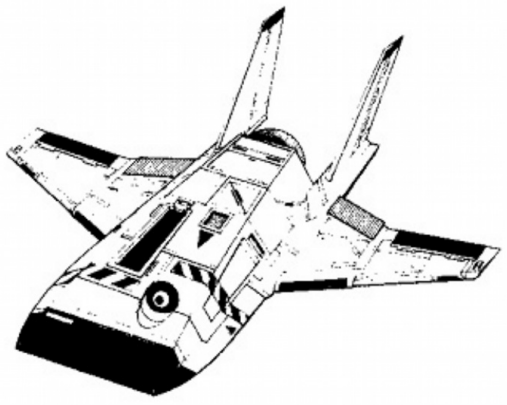
Weapons	Loc	Heat	SRV	MRV	LRV	ERV
SRM 6	Nose	4	8	—	—	—
Ammo (SRM) 15						
Med Pulse Laser	Nose	4	7	7	—	—

Alternate Configuration B

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
ER Small Laser	Nose	2	5	—	—	—
LRM 5	RW	2	3	3	3	—
Ammo (LRM) 25						
LRM 5	LW	2	3	3	3	—
Ammo (LRM) 25						

Alternate Configuration C

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
ER Large Laser	Nose	12	10	10	10	10
ER Small Laser	Nose	2	5	—	—	—



SYD Z1 SEYDLITZ

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 11
Max Thrust: 17
Armor: 20/6/10
Mass: 20 tons
Fuel: 3 tons (240 points)
Heat Sinks: 10
SI: 11

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Large Laser	Nose	8	8	8	—	—

SYD Z2 SEYDLITZ

See SYD Z1 for remaining specifications

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
3 Medium Lasers	Nose	3	5	—	—	—
Medium Laser	RW	3	5	—	—	—
Medium Laser	LW	3	5	—	—	—

SYD Z2A SEYDLITZ

See SYD Z1 for remaining specifications
Fuel: 5 tons (400 points)
Heat Sinks: 10 (20)
Armor: 30/12/20

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
3 Medium Lasers	Nose	3	5	—	—	—
Medium Laser	RW	3	5	—	—	—
Medium Laser	LW	3	5	—	—	—

SYD Z3 SEYDLITZ

See SYD Z1 for remaining specifications
Armor: 35/15/25

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Medium Laser	RW	3	5	—	—	—
Medium Laser	LW	3	5	—	—	—

SYD Z3A SEYDLITZ

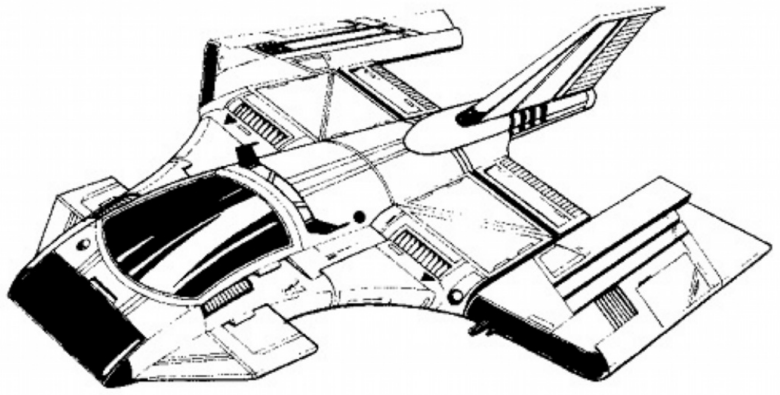
See SYD Z1 for remaining specifications
Armor: 33/17/25
Fuel: 5 tons (400 points)

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 Med Pulse Lasers	Nose	4	6	—	—	—

SYD Z4 SEYDLITZ

See SYD Z2A for remaining specifications

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
ER Large Laser	Nose	12	8	8	8	—



F-10 CHEETAH

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 12
Max Thrust: 18
Armor: 23/11/13
Mass: 25 tons
Fuel: 4 tons (320 points)
Heat Sinks: 10
SI: 12

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Small Laser	Nose	1	3	—	—	—
Medium Laser	RW	3	5	—	—	—
Medium Laser	LW	3	5	—	—	—

F-11-R CHEETAH

See F-10 for remaining specifications
Fuel: 6 tons (480 points)

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Small Laser	Nose	1	3	—	—	—

F-11-RR CHEETAH

See F-10 for remaining specifications
Fuel: 10 tons (800 points)

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Small Laser	Nose	1	3	—	—	—
Medium Laser	RW	3	5	—	—	—
Medium Laser	LW	3	5	—	—	—

F-12-S CHEETAH

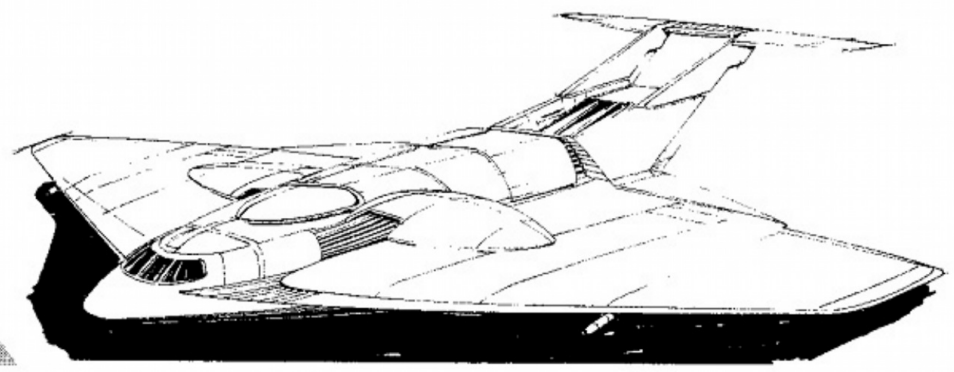
See F-10 for remaining specifications
Fuel: 3 tons (240 points)

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Small Laser	Nose	1	3	—	—	—
SRM 4	Nose	3	6	—	—	—
Ammo (SRM) 25						

F-14-S CHEETAH

See F-10 for remaining specifications
Armor: 36/19/26

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 Streak SRM 2	Nose	2	4	—	—	—
Ammo (Streak) 50						

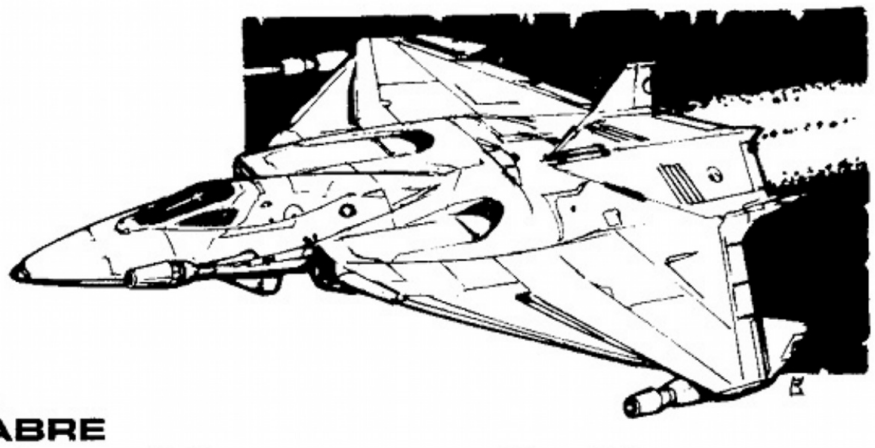


TRN-3T TRIDENT

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust:12
Max Thrust: 18
Armor: 21/11/6
Mass: 20 tons
Fuel: 3 tons (240 points)
Heat Sinks: 10
SI: 12

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Medium Laser	Nose	3	5	—	—	—
Medium Laser	RW	3	5	—	—	—
Medium Laser	LW	3	5	—	—	—
Small Laser	Aft	1	3	—	—	—

FIGHTER GAME STATISTICS

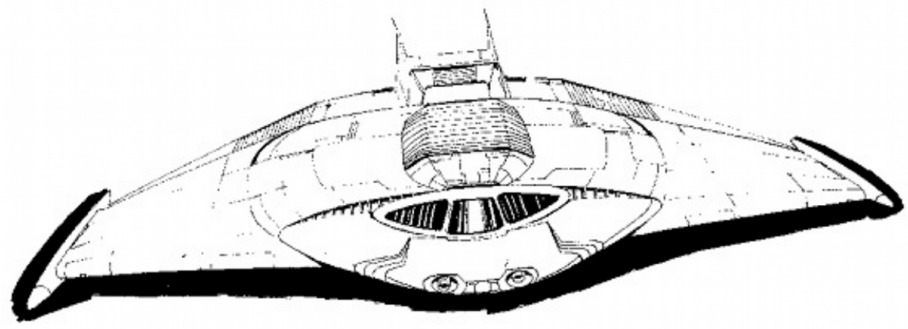


SABRE

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 11
Max Thrust: 17
Armor: 30/15/15

Mass: 25 tons
Fuel: 5 tons (400 points)
Heat Sinks: 10
SI: 11

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Medium Laser	Nose	3	5	—	—	—
Medium Laser	RW	3	5	—	—	—
Medium Laser	LW	3	5	—	—	—

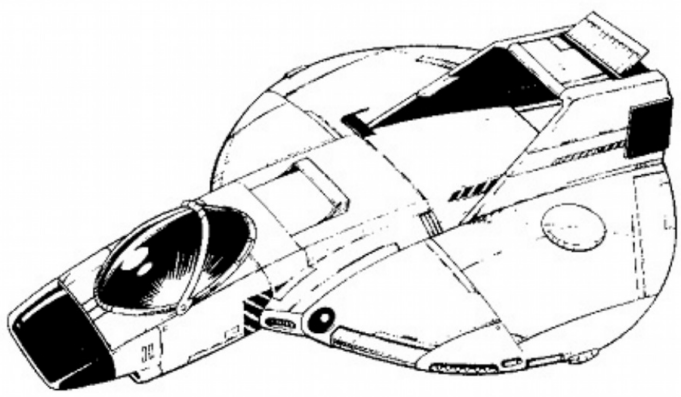


SW-606 SWIFT

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 13
Max Thrust: 21
Armor: 22/10/6

Mass: 25 tons
Fuel: 3 tons (240 points)
Heat Sinks: 10
SI: 13

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Medium Laser	Nose	3	5	—	—	—
Small Laser	Nose	1	3	—	—	—

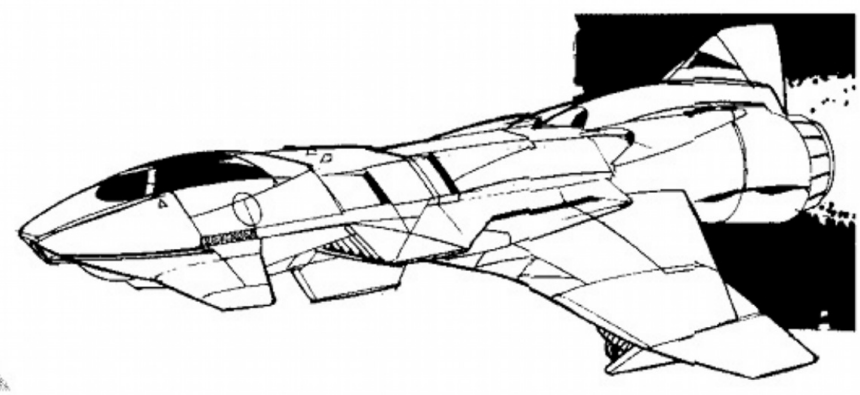


TR-7 THRUSH

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 12
Max Thrust: 18
Armor: 17/6/8

Mass: 25 tons
Fuel: 5 tons (400 points)
Heat Sinks: 10
SI: 12

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Medium Laser	Nose	3	5	—	—	—
Medium Laser	RW	3	5	—	—	—
Medium Laser	LW	3	5	—	—	—

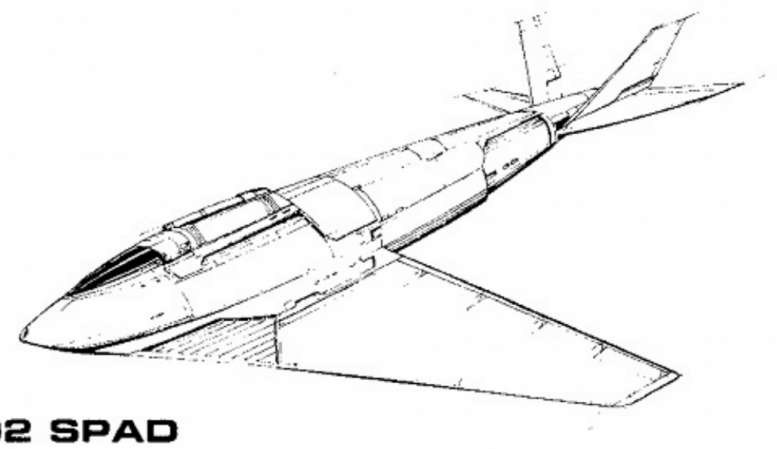


CENTURION

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 10
Max Thrust: 15
Armor: 50/27/28

Mass: 30 tons
Fuel: 5 tons (400 points)
Heat Sinks: 10
SI: 10

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Medium Laser	Nose	3	5	—	—	—
Medium Laser	RW	3	5	—	—	—
Medium Laser	LW	3	5	—	—	—

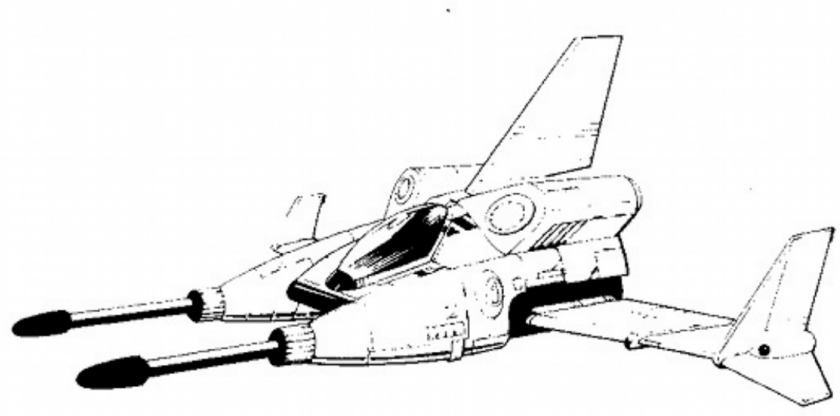


SPD-502 SPAD

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 7
Max Thrust: 11
Armor: 57/25/32

Mass: 30 tons
Fuel: 5 tons (400 points)
Heat Sinks: 10
SI: 7

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
PPC	Nose	10	10	10	—	—
Medium Laser	Nose	3	5	—	—	—
Small Laser	Nose	1	3	—	—	—



SPR-H5 SPARROWHAWK

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 10
Max Thrust: 15
Armor: 50/24/34

Mass: 30 tons
Fuel: 5 tons (400 points)
Heat Sinks: 10
SI: 10

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 Medium Lasers	Nose	3	5	—	—	—
Small Laser	RW	1	3	—	—	—
Small Laser	LW	1	3	—	—	—

SPR-H5K SPARROWHAWK

See SPR-H5 for remaining specifications

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 Small Lasers	Nose	1	3	—	—	—
2 Small Lasers	RW	1	3	—	—	—
2 Small Lasers	LW	1	3	—	—	—

SPR-6D SPARROWHAWK

See SPR-H5 for remaining statistics.

Armor: 61/27/39

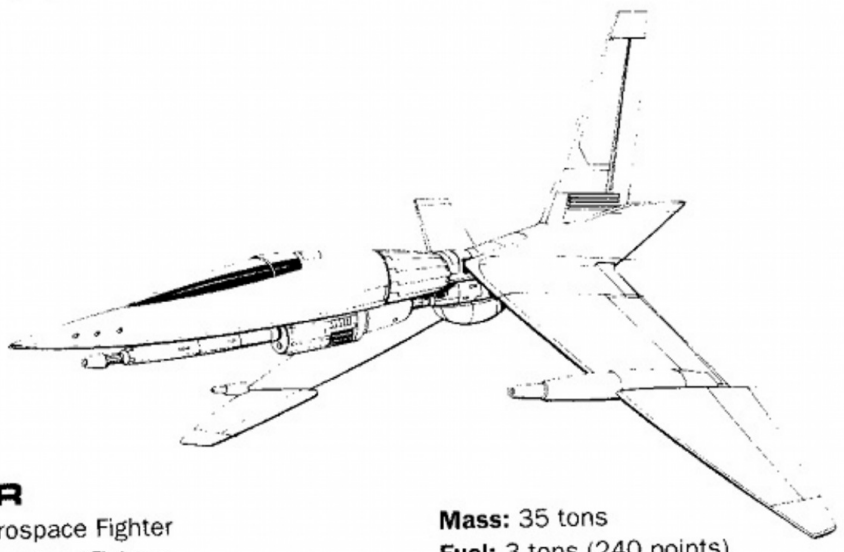
Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 Med Pulse Lasers	Nose	4	6	—	—	—
Small Pulse Laser	RW	2	3	—	—	—
Small Pulse Laser	LW	2	3	—	—	—

SPR-8H SPARROWHAWK

See SPR-H5 for remaining specifications

Armor: 57/24/35

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
SRM 2	Nose	2	2	—	—	—
Ammo (SRM) 50						
Small Laser	Nose	1	3	—	—	—



AVAR

Type: Aerospace Fighter
Tech: Clan OmniFighter
Safe Thrust: 10
Max Thrust: 15
Armor: 54/32/28

Mass: 35 tons
Fuel: 3 tons (240 points)
Heat Sinks: 10 (20)
SI: 10

Primary Configuration

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Streak SRM 6	Nose	4	12	12	—	—
Ammo (Streak) 15						
Med Pulse Laser	Nose	4	7	7	—	—
ER Large Laser	Nose	12	10	10	10	10
Med Pulse Laser	RW	4	7	7	—	—
Med Pulse Laser	LW	4	7	7	—	—

Alternate Configuration A

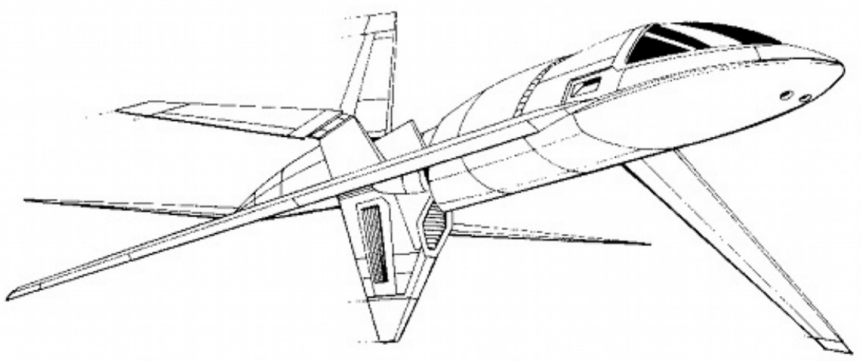
Weapons	Loc	Heat	SRV	MRV	LRV	ERV
LRM 20+Artemis	Nose	6	16	16	16	—
Ammo (LRM) 12						
2 ER Medium Lasers	RW	5	7	7	—	—
2 ER Medium Lasers	LW	5	7	7	—	—
Med Pulse Laser	Aft	4	7	7	—	—

Alternate Configuration B

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 Lg Pulse Lasers	Nose	10	10	10	10	—
ER Medium Laser	RW	5	7	7	—	—
ER Medium Laser	LW	5	7	7	—	—

Alternate Configuration C

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Narc Missile Beacon	Nose	0	—	—	—	—
Ammo (Narc) 6						
ER Medium Laser	Nose	5	7	7	—	—
2 SRM 6	RW	4	8	—	—	—
Ammo (SRM) 30						
ER Med Laser	RW	5	7	7	—	—
2 SRM 6	LW	4	8	—	—	—
ER Med Laser	LW	5	7	7	—	—



VANDAL

Type: Aerospace Fighter
Tech: Clan OmniFighter
Safe Thrust: 14
Max Thrust: 21
Armor: 41/20/17

Mass: 30 tons
Fuel: 3 tons (240 points)
Heat Sinks: 10 (20)
SI: 14

Primary Configuration

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 ER Small Lasers	Nose	2	5	—	—	—
Active Probe	Nose	—	—	—	—	—
+ 1 ton fuel (80 points)						

Alternate Configuration A

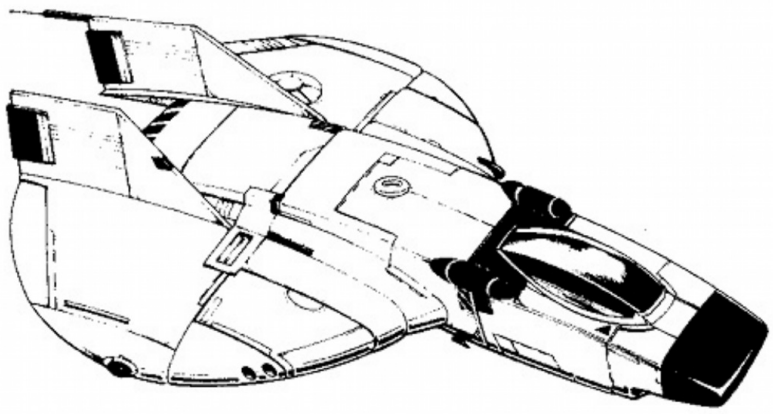
Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Med Pulse Laser	Nose	4	7	7	—	—
ER Small Laser	RW	2	5	—	—	—
ER Small Laser	LW	2	5	—	—	—

Alternate Configuration B

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 ER Small Lasers	Nose	2	5	—	—	—
2 ER Small Lasers	RW	2	5	—	—	—
2 ER Small Lasers	LW	2	5	—	—	—

Alternate Configuration C

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
3 ER Med Lasers	Nose	5	7	7	—	—



SL-21 SHOLAGAR

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 10
Max Thrust: 15
Armor: 40/23/20

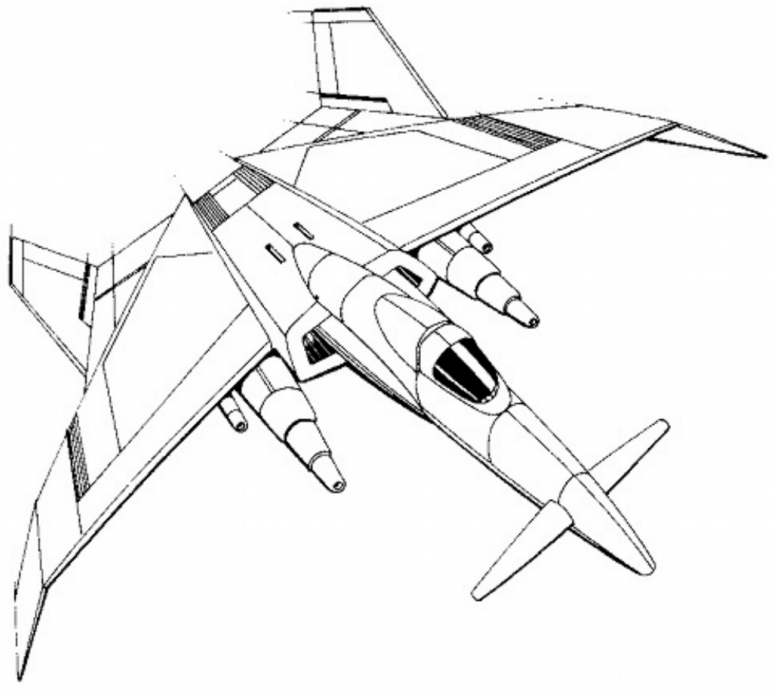
Mass: 35 tons
Fuel: 5 tons (400 points)
Heat Sinks: 10
SI: 10

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
SRM 4	Nose	3	6	—	—	—
Ammo (SRM) 25						
Medium Laser	RW	3	5	—	—	—
Medium Laser	LW	3	5	—	—	—

SL-21L SHOLAGAR

See SL-21 for remaining specifications
Heat Sinks: 11

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 Medium Lasers	Nose	3	5	—	—	—
Medium Laser	RW	3	5	—	—	—
Medium Laser	LW	3	5	—	—	—



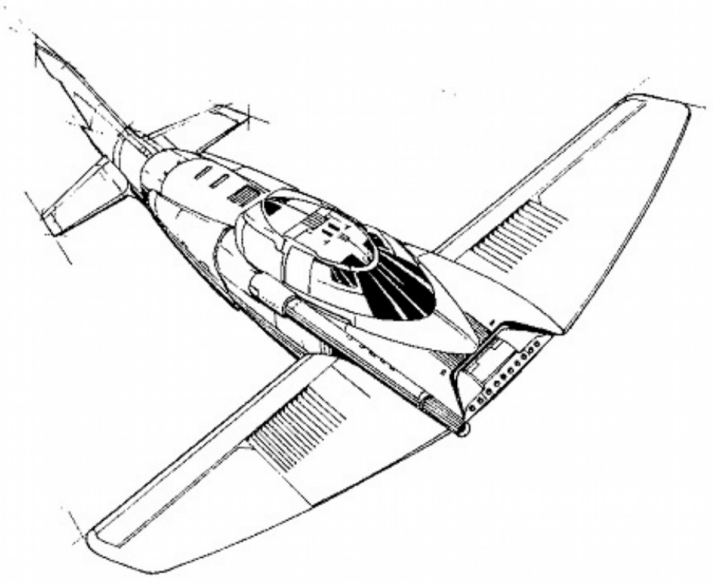
BATU

Type: Aerospace Fighter
Tech: Clan OmniFighter
Safe Thrust: 9
Max Thrust: 14
Armor: 62/38/28

Mass: 40 tons
Fuel: 3 tons (240 points)
Heat Sinks: 10 (20)
SI: 9

Primary Configuration

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
ER Large Laser	Nose	12	10	10	10	10
2 Med Pulse Lasers	RW	4	7	7	—	—
2 Med Pulse Lasers	LW	4	7	7	—	—
ER Medium Laser	Aft	5	7	7	—	—
Targeting Computer						
+2 Double Heat Sinks						



ZRO-114 ZERO

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 6
Max Thrust: 9
Armor: 73/28/43

Mass: 35 tons
Fuel: 5 tons (400 points)
Heat Sinks: 10
SI: 6

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
LRM 10	Nose	4	6	6	6	—
Ammo (LRM) 12						
Large Laser	Nose	8	8	8	—	—
Medium Laser	Nose	3	5	—	—	—

Alternate Configuration A

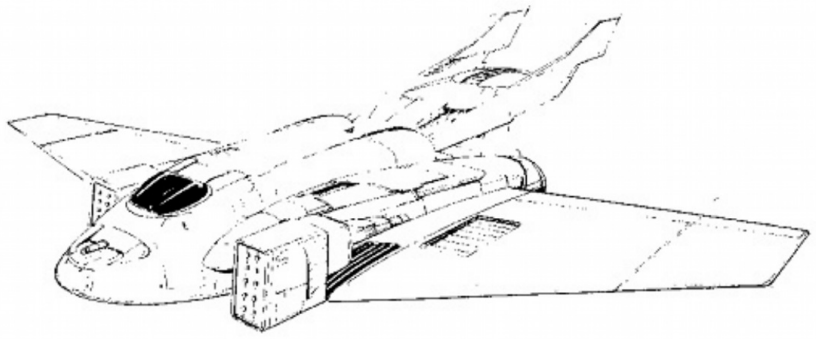
Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Narc Missile Beacon	Nose					
Ammo (Narc) 6						
ER PPC	Nose	15	15	15	15	—
2 SRM 6	RW	4	8	—	—	—
Ammo (SRM) 15						
2 SRM 6	LW	4	8	—	—	—
Ammo (SRM) 15						
+1 Double Heat Sink						

Alternate Configuration B

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
3 Med Pulse Lasers	Nose	4	7	7	—	—
2 Med Pulse Lasers	RW	4	7	7	—	—
2 Med Pulse Lasers	LW	4	7	7	—	—
ER Medium Laser	Aft	5	7	7	—	—
Targeting Computer						

Alternate Configuration C

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Gauss Rifle	Nose	1	15	15	15	—
Ammo (Gauss) 8						
2 ER Medium Lasers	Nose	5	7	7	—	—
2 ER Small Lasers	RW	2	5	—	—	—
2 ER Small Lasers	LW	2	5	—	—	—
ER Medium Laser	Aft	5	7	7	—	—



RGU-133E ROGUE

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 7
Max Thrust: 11
Armor: 40/27/15
Mass: 40 tons
Fuel: 5 tons (400 points)
Heat Sinks: 10
SI: 7

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Medium Laser	Nose	3	5	—	—	—
LRM 15	RW	5	9	9	9	—
Ammo (LRM) 8						
LRM 15	LW	5	9	9	9	—
Ammo (LRM) 8						
Medium Laser	Aft	3	5	—	—	—

RGU-133F ROGUE

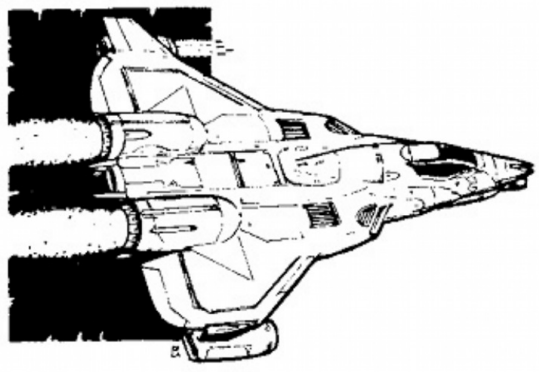
See RGU-133E for remaining specifications

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Medium Laser	Nose	3	5	—	—	—
2 SRM 6	RW	4	8	—	—	—
Ammo (SRM) 30						
2 SRM 6	LW	4	8	—	—	—
Ammo (SRM) 30						
Medium Laser	Aft	3	5	—	—	—

RGU-133L ROGUE

See RGU-133E for remaining specifications
Heat Sinks: 16

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Medium Laser	Nose	3	5	—	—	—
Large Laser	RW	8	8	8	—	—
Large Laser	LW	8	8	8	—	—
Medium Laser	Aft	3	5	—	—	—



S-4 SAI

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 8
Max Thrust: 12
Armor: 40/30/25
Mass: 40 tons
Fuel: 5 tons (400 points)
Heat Sinks: 12 (24)
SI: 8

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
ER PPC	Nose	15	10	10	10	—
SRM 6+Artemis	RW	4	10	—	—	—
Ammo (SRM) 15						
SRM 6+Artemis	LW	4	10	—	—	—
Ammo (SRM) 15						

S-4C SAI

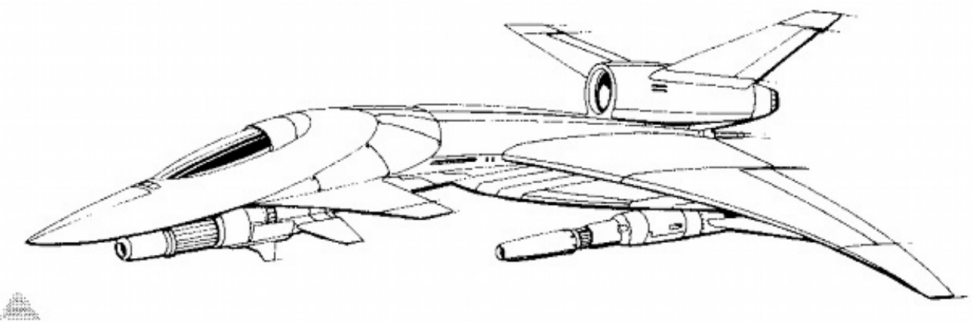
See S-4 for remaining specifications
Tech: Clan
Heat Sinks: 14 (28)
Armor: 40/33/28

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
ER PPC	Nose	15	15	15	15	—
2 Streak SRM 4	RW	3	8	8	—	—
Ammo (Streak) 25						
2 Streak SRM 4	RW	3	8	8	—	—
Ammo (Streak) 25						

S-7 SAI

See S-4 for remaining specifications
Fuel: 6 tons (480 points)

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 ER Medium Lasers	Nose	5	5	5	—	—
MRM 20	RW	6	12	12	—	—
Ammo (MRM) 12						
MRM 20	LW	6	12	12	—	—
Ammo (MRM) 12						



SULLA

Type: Aerospace Fighter
Tech: Clan OmniFighter
Safe Thrust: 9
Max Thrust: 14
Armor: 56/41/35
Mass: 45 tons
Fuel: 5 tons (400 points)
Heat Sinks: 13 (26)
SI: 9

Primary Configuration

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
ER PPC	Nose	15	15	15	15	—
ER Large Laser	RW	12	10	10	10	10
ER Large Laser	LW	12	10	10	10	10
ER Small Laser	Aft	2	5	—	—	—

Alternate Configuration A

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
ER Large Laser	Nose	12	10	10	10	10
ER Medium Laser	Nose	5	7	7	—	—
LRM 10+Artemis	RW	4	8	8	8	—
Ammo (LRM) 12						
LRM 10+Artemis	LW	4	8	8	8	—
Ammo (LRM) 12						
ER Small Laser	Aft	2	5	—	—	—

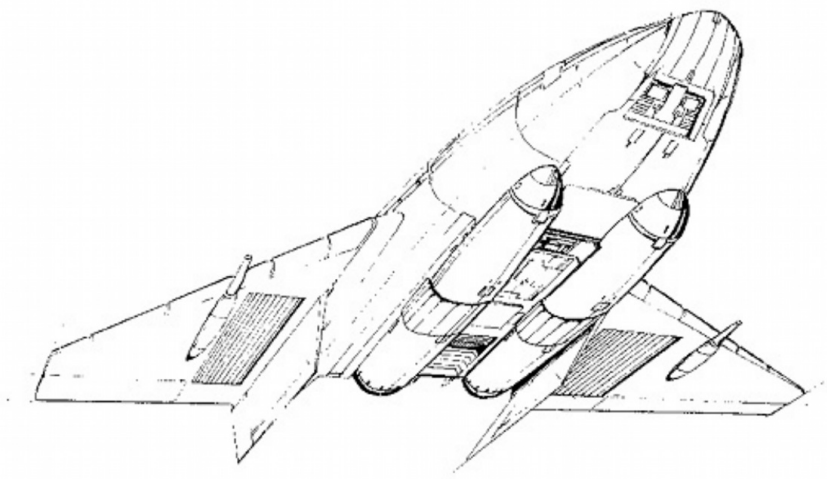
Alternate Configuration B

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
LRM 20+Artemis	RW	6	16	16	16	—
Ammo (LRM) 6						
LRM 20+Artemis	LW	6	16	16	16	—
Ammo (LRM) 6						
ER Small Laser	Aft	2	5	—	—	—

Alternate Configuration C

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Med Pulse Laser	Nose	4	7	7	—	—
ER PPC	RW	15	15	15	15	—
ER PPC	LW	15	15	15	15	—
ER Small Laser	Aft	2	5	—	—	—

FIGHTER GAME STATISTICS



THK-63 TOMAHAWK

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 8
Max Thrust: 12
Armor: 68/43/38
Mass: 45 tons
Fuel: 5 tons (400 points)
Heat Sinks: 12 (24)
SI: 8

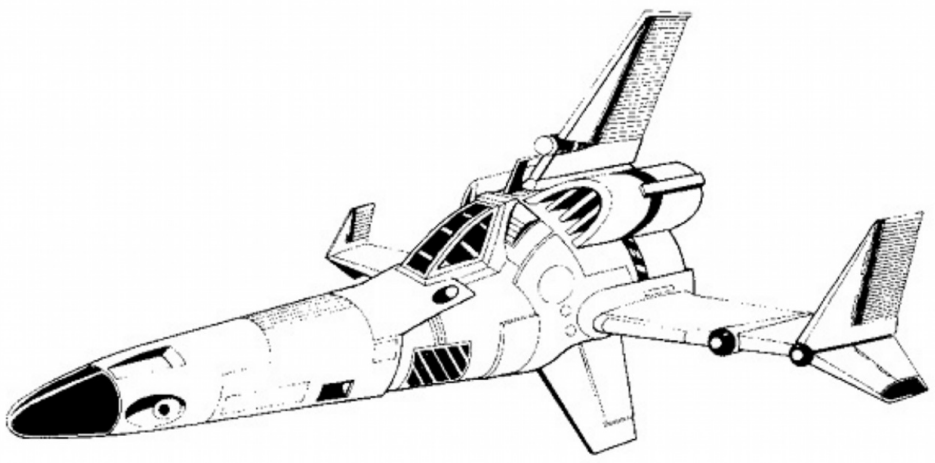
Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Small Laser	Nose	1	3	—	—	—
Large Laser	RW	8	8	8	—	—
Large Laser	LW	8	8	8	—	—

THK-53 TOMAHAWK

See THK-63 for remaining specifications
Armor: 68/47/38
Heat Sinks: 16 (32)

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
3 Medium Lasers	RW	3	5	—	—	—
3 Medium Lasers	LW	3	5	—	—	—

MEDIUM AEROSPACE FIGHTERS



CSR-V12 CORSAIR

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 6
Max Thrust: 9
Armor: 83/50/43
Mass: 50 tons
Fuel: 5 tons (400 points)
Heat Sinks: 16
SI: 6

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 Large Lasers	Nose	8	8	8	—	—
2 Small Lasers	Nose	1	3	—	—	—
Medium Laser	RW	3	5	—	—	—
Medium Laser	LW	3	5	—	—	—
2 Small Lasers	Aft	1	3	—	—	—

CSR-V20 CORSAIR

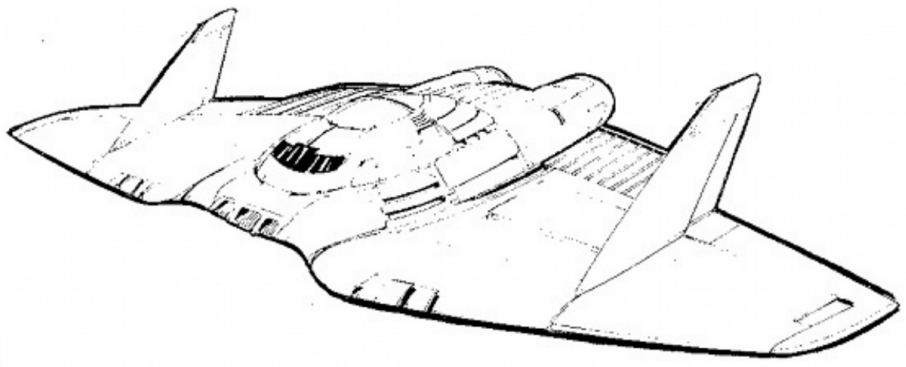
See CSR-V12 for remaining specifications

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 Large Lasers	Nose	8	8	8	—	—
SRM 6	Nose	4	8	—	—	—
Ammo (SRM) 15						

CSR-V12M CORSAIR

See CSR-V12 for remaining specifications
Armor: 83/56/63
Heat Sinks: 19

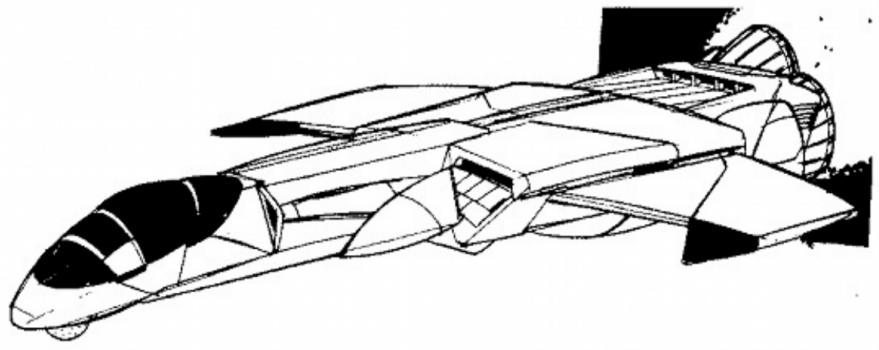
Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Large Laser	Nose	8	8	8	—	—
2 Small Lasers	Nose	1	3	—	—	—
Medium Laser	LW	3	5	—	—	—
Medium Laser	RW	3	5	—	—	—



HCT-213B HELLCAT II

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 7
Max Thrust: 11
Armor: 78/51/45
Mass: 50 tons
Fuel: 5 tons (400 points)
Heat Sinks: 15
SI: 7

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Beagle Active Probe	Nose	—	—	—	—	—
Large Laser	RW	8	8	8	—	—
Large Laser	LW	8	8	8	—	—
Medium Laser	Aft	3	5	—	—	—

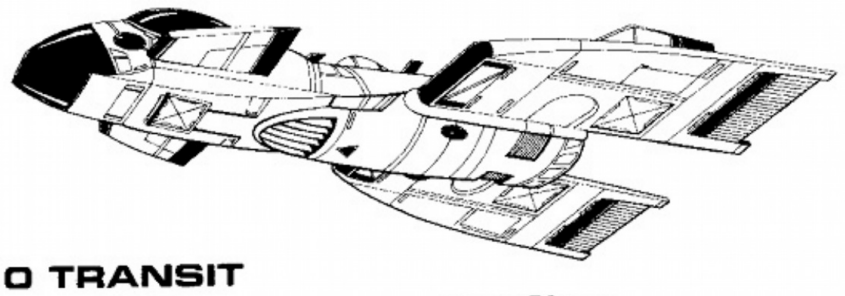


LIGHTNING

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 6
Max Thrust: 9
Armor: 77/35/33
Mass: 50 tons
Fuel: 5 tons (400 points)
Heat Sinks: 13
SI: 6

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
AC/20	Nose	7	20	—	—	—
Ammo (AC) 10						
Medium Laser	Nose	3	5	—	—	—
Medium Laser	RW	3	5	—	—	—
Medium Laser	LW	3	5	—	—	—
Medium Laser	Aft	3	5	—	—	—

FIGHTER GAME STATISTICS



TR-10 TRANSIT

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 6
Max Thrust: 9
Armor: 77/35/33

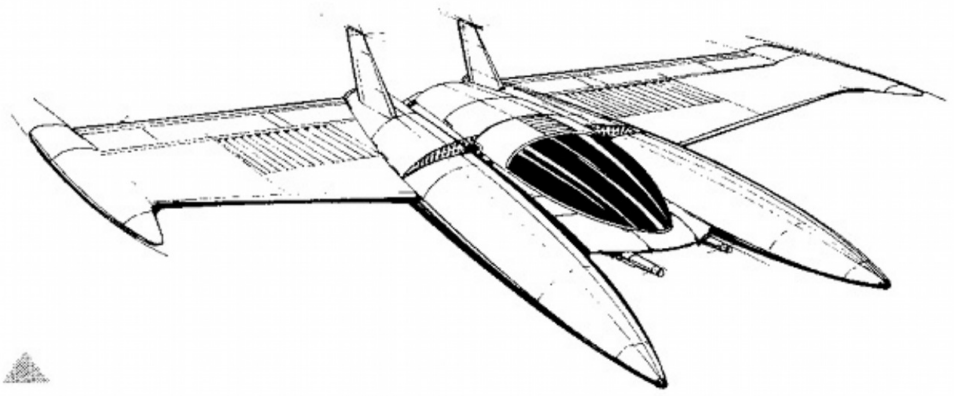
Mass: 50 tons
Fuel: 5 tons (400 points)
Heat Sinks: 13
SI: 6

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
AC/20	Nose	7	20	—	—	—
Ammo (AC) 10						
2 Medium Lasers	Nose	3	5	—	—	—
Medium Laser	RW	3	5	—	—	—
Medium Laser	LW	3	5	—	—	—

TR-11 TRANSIT

See TR-10 for remaining statistics. May carry one observer.

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
AC/20	Nose	7	20	—	—	—
Ammo (AC) 10						
Cargo (4 Tons)						

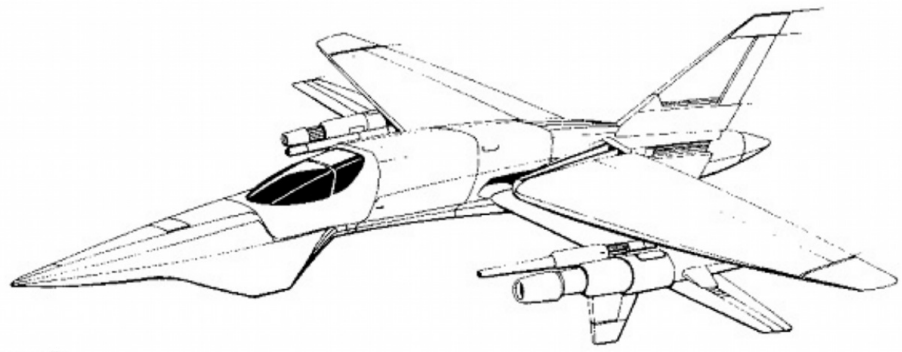


GTHA-500 GOTHA

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 5
Max Thrust: 8
Armor: 88/54/48

Mass: 60 tons
Fuel: 6 tons (480 points)
Heat Sinks: 14
SI: 6

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
PPC	Nose	10	10	10	—	—
2 Medium Lasers	Nose	3	5	—	—	—
LRM 15	RW	5	9	9	9	—
Small Laser	RW	1	3	—	—	—
LRM 15	LW	5	9	9	9	—
Ammo (LRM) 8						
Small Laser	LW	1	3	—	—	—
2 Medium Lasers	Aft	3	5	—	—	—



TURK

Type: Aerospace Fighter
Tech: Clan OmniFighter
Safe Thrust: 7
Max Thrust: 11
Armor: 60/44/46

Mass: 50 tons
Fuel: 5 tons (400 points)
Heat Sinks: 12 (24)
SI: 7

Primary Configuration

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
ER PPC	RW	15	15	15	15	—
ER Large Laser	RW	12	10	10	10	10
ER PPC	LW	15	15	15	15	—
ER Large Laser	LW	12	10	10	10	10
+4 Double Heat Sinks						

Alternate Configuration A

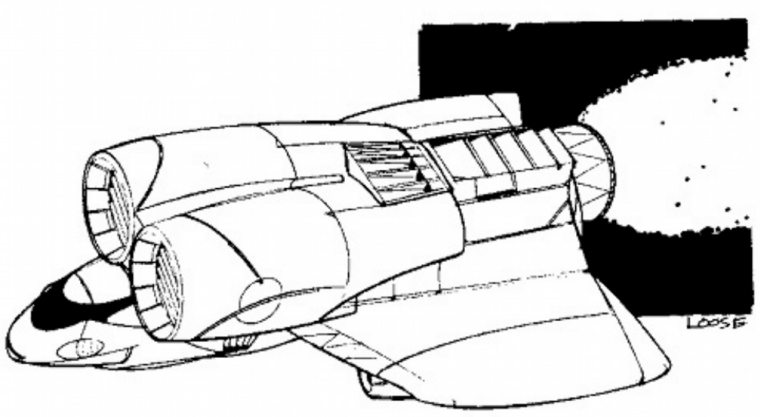
Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Gauss Rifle	Nose	1	15	15	15	—
Ammo (Gauss) 16						
ER Large Laser	Nose	12	10	10	10	10
SRM 4	RW	3	6	—	—	—
Ammo (SRM) 25						
SRM 4	LW	3	6	—	—	—
Ammo (SRM) 25						
Med Pulse Laser	Aft	4	7	7	—	—

Alternate Configuration B

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 ER Medium Lasers	Nose	5	7	7	—	—
Ultra AC/10	RW	6	15	15	—	—
Ammo (Ultra) 10						
Ultra AC/10	LW	6	15	15	—	—
Ammo (Ultra) 10						

Alternate Configuration C

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
LRM 20	Nose	6	12	12	12	—
Ammo (LRM) 12						
ER Large Laser	RW	12	10	10	10	10
Streak SRM 6	RW	4	12	12	—	—
Ammo (Streak) 15						
ER Large Laser	LW	12	10	10	10	10
Streak SRM 6	LW	4	12	12	—	—
Ammo (Streak) 15						
ER Medium Laser	Aft	5	7	7	—	—

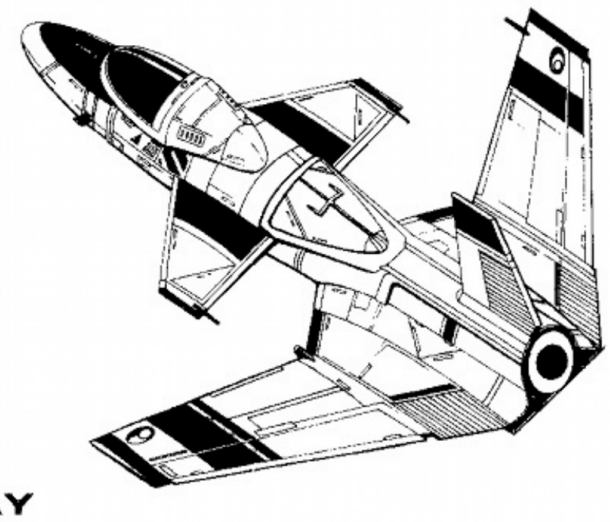


HCT-213 HELLCAT

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 6
Max Thrust: 9
Armor: 69/40/33

Mass: 60 tons
Fuel: 5 tons (400 points)
Heat Sinks: 20
SI: 6

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Large Laser	Nose	8	8	8	—	—
2 Medium Lasers	Nose	3	5	—	—	—
Large Laser	RW	8	8	8	—	—
Medium Laser	RW	3	5	—	—	—
Large Laser	LW	8	8	8	—	—
Medium Laser	LW	3	5	—	—	—
Medium Laser	Aft	3	5	—	—	—

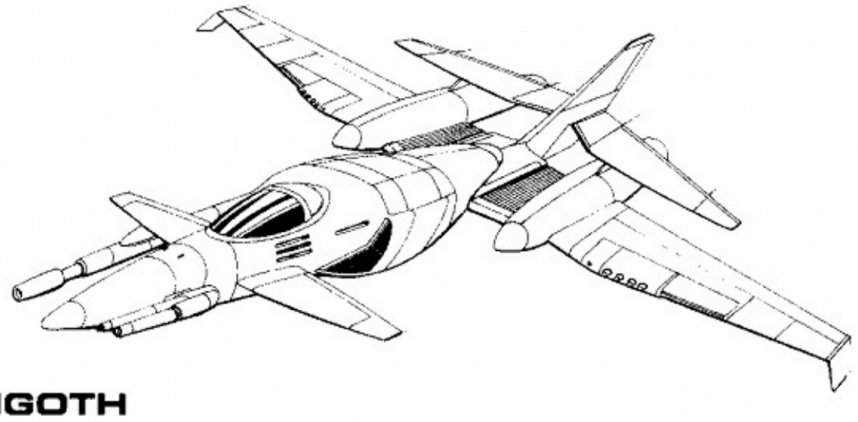


F-90 STINGRAY

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 6
Max Thrust: 9
Armor: 70/45/34

Mass: 60 tons
Fuel: 5 tons (400 points)
Heat Sinks: 20
SI: 6

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
PPC	Nose	10	10	10	—	—
Medium Laser	RW	3	5	—	—	—
Large Laser	RW	8	8	8	—	—
Medium Laser	LW	3	5	—	—	—
Large Laser	LW	8	8	8	—	—



VISIGOTH

Type: Aerospace Fighter
Tech: Clan OmniFighter
Safe Thrust: 7
Max Thrust: 11
Armor: 77/47/43

Mass: 60 tons
Fuel: 5 tons (400 points)
Heat Sinks: 16 (32)
SI: 7

Primary Configuration

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
LB 10-X AC	Nose	2	6	6	—	—
Ammo (LB-X) 30						
3 ER Medium Lasers	Nose	5	7	7	—	—
Streak SRM 4	RW	3	8	8	—	—
Ammo (Streak) 25						
Small Pulse Laser	RW	2	3	—	—	—
Streak SRM 4	LW	3	8	8	—	—
Ammo (Streak) 25						
Small Pulse Laser	LW	2	3	—	—	—
2 ER Medium Lasers	Aft	5	7	7	—	—

F-90S STINGRAY

See F-90 for remaining specifications
Armor: 62/42/34 **Heat Sinks:** 19

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
AC/5	Nose	1	5	5	—	—
Ammo (AC) 20						
Medium Laser	RW	3	5	—	—	—
Large Laser	RW	8	8	8	—	—
Medium Laser	LW	3	5	—	—	—
Large Laser	LW	8	8	8	—	—

F-92 STINGRAY

See F-90 for remaining specifications
Heat Sinks: 20 (40)

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
ER PPC	Nose	15	10	10	10	—
Medium Laser	RW	3	5	—	—	—
ER Large Laser	RW	12	8	8	8	—
Medium Laser	LW	3	5	—	—	—
ER Large Laser	LW	12	8	8	8	—

F-94 STINGRAY

See F-90 for remaining specifications

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
ER Large Laser	Nose	12	8	8	8	—
Medium Laser	Nose	3	5	—	—	—
LRM 10	RW	4	6	6	6	—
Ammo (LRM) 12						
Medium Laser	RW	3	5	—	—	—
LRM 10	LW	4	6	6	6	—
Medium Laser	LW	3	5	—	—	—

Alternate Configuration A

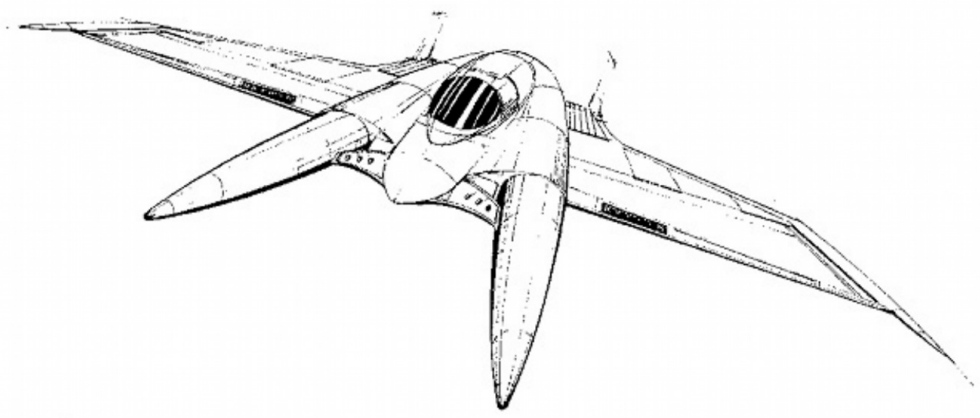
Weapons	Loc	Heat	SRV	MRV	LRV	ERV
ER PPC	Nose	15	15	15	15	—
2 ER Medium Lasers	Nose	5	7	7	—	—
LRM 20+Artemis	RW	6	16	16	16	—
Ammo (LRM) 12						
LRM 20+Artemis	LW	6	16	16	16	—
Ammo (LRM) 12						
2 ER Medium Lasers	Aft	5	7	7	—	—

Alternate Configuration B

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 Lg Pulse Lasers	Nose	10	10	10	10	—
Large Pulse Laser	RW	10	10	10	10	—
Large Pulse Laser	LW	10	10	10	10	—
Med Pulse Laser	Aft	4	7	7	—	—

Alternate Configuration C

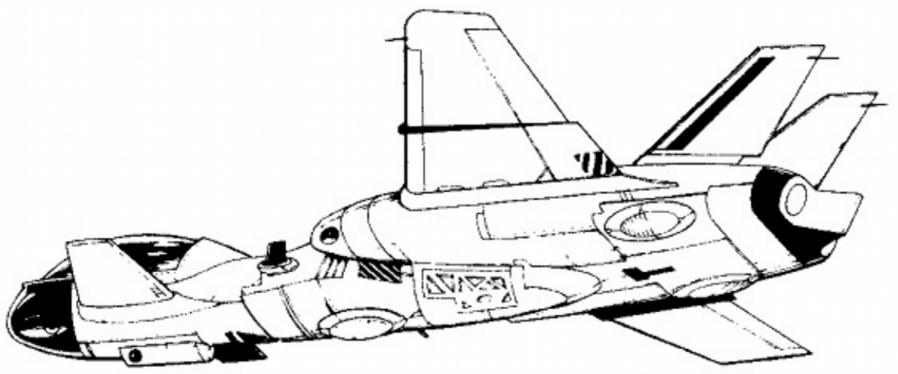
Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Large Pulse Laser	Nose	10	10	10	10	—
Med Pulse Laser	Nose	4	7	7	—	—
Large Pulse Laser	RW	10	10	10	10	—
Med Pulse Laser	RW	4	7	7	—	—
Large Pulse Laser	LW	10	10	10	10	—
Med Pulse Laser	LW	4	7	7	—	—
SRM 4	Aft	3	6	—	—	—
Ammo (SRM) 25						



IRN-SD1 IRONSIDES

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 6
Max Thrust: 9
Armor: 66/36/51
Mass: 65 tons
Fuel: 5 tons (400 points)
Heat Sinks: 10 (20)
SI: 7

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 PPC	Nose	10	10	10	—	—
SRM 6	Nose	4	8	—	—	—
2 SRM 6	RW	4	8	—	—	—
Medium Laser	RW	3	5	—	—	—
2 SRM 6	LW	4	8	—	—	—
Ammo (SRM) 15						
Medium Laser	LW	3	5	—	—	—



LCF-R15 LUCIFER

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 5
Max Thrust: 8
Armor: 75/38/37
Mass: 65 tons
Fuel: 5 tons (400 points)
Heat Sinks: 20
SI: 6

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 Large Lasers	Nose	8	8	8	—	—
LRM 20	Nose	6	12	12	12	—
Ammo (LRM) 30						
2 Small Lasers	RW	1	3	—	—	—
2 Small Lasers	LW	1	3	—	—	—
Medium Laser	Aft	3	5	—	—	—

LCF-R16 LUCIFER

See LCF-R15 for remaining specifications
Armor: 75/48/38
Heat Sinks: 20 (40)

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 ER Large Lasers	Nose	12	8	8	8	—
LRM 20+Artemis	Nose	6	16	16	16	—
Ammo (LRM) 12						
Streak SRM 2	RW	2	4	—	—	—
Ammo (Streak) 50						
Streak SRM 2	LW	2	4	—	—	—
Med Pulse Laser	Aft	4	6	—	—	—

LCF-R16K LUCIFER II

See LCF-R15 for remaining specifications
Safe Thrust: 6
Max Thrust: 9
Fuel: 4 tons (320 points)
Armor: 45/24/26

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 Large Laser	Nose	8	8	8	—	—
SRM 6	Nose	4	8	—	—	—
Ammo (SRM) 15						
LRM 20	Nose	6	12	12	12	—
Ammo (LRM) 6						
2 Small Lasers	RW	1	3	—	—	—
2 Small Lasers	LW	1	3	—	—	—
Medium Laser	Aft	3	5	—	—	—

LCF-R16KR LUCIFER II

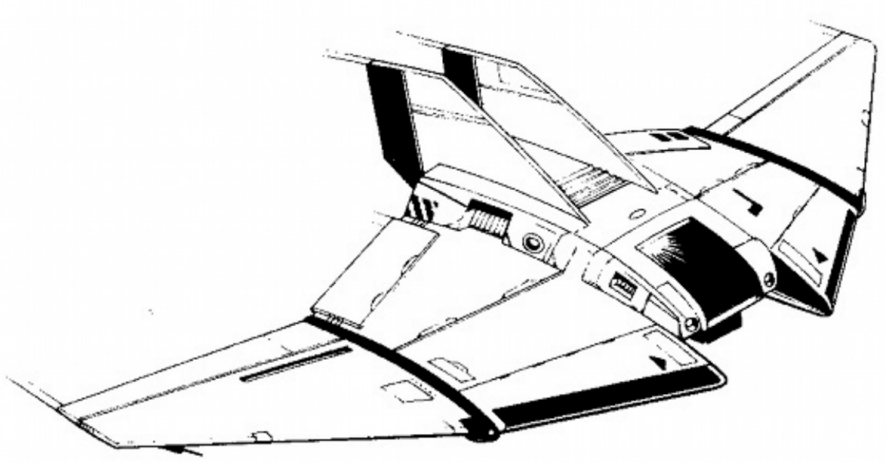
See LCF-R15 for remaining specifications
Safe Thrust: 6
Max Thrust: 9
Heat Sinks: 20 (40)
Armor: 49/24/26

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 ER Large Lasers	Nose	12	8	8	8	—
LRM 20	Nose	6	12	12	12	—
Ammo (LRM) 12						
2 SRM 6	Nose	4	8	—	—	—
Ammo (SRM) 30						
Small Pulse Laser	RW	2	3	—	—	—
Small Pulse Laser	LW	2	3	—	—	—
Med Pulse Laser	Aft	4	6	—	—	—

LCF-R20 LUCIFER

See LCF-R15 for remaining specifications
Armor: 150/80/73
Heat Sinks: 23

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 Large Lasers	Nose	8	8	8	—	—
2 Small Lasers	RW	1	3	—	—	—
2 Small Lasers	LW	1	3	—	—	—
Medium Laser	Aft	3	5	—	—	—



SL-17 SHILONE

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 6
Max Thrust: 9
Armor: 70/44/36
Mass: 65 tons
Fuel: 5 tons (400 points)
Heat Sinks: 20
SI: 6

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
LRM 20	Nose	6	12	12	12	—
Ammo (LRM) 12						
Large Laser	Nose	8	8	8	—	—
Medium Laser	RW	3	5	—	—	—
Medium Laser	LW	3	5	—	—	—
SRM 4	Aft	3	6	—	—	—
Ammo (SRM) 25						

SL-17AC SHILONE

See SL-17 for remaining specifications

Heat Sinks: 19

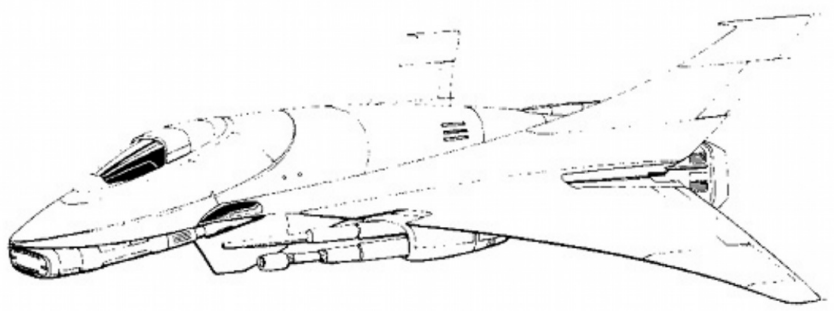
Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 AC/2	Nose	1	2	2	2	—
Ammo (AC) 45						
Large Laser	Nose	8	8	8	—	—
Medium Laser	RW	3	5	—	—	—
Medium Laser	LW	3	5	—	—	—
SRM 4	Aft	3	6	—	—	—
Ammo (SRM) 25						

SL-17R SHILONE

See SL-17 for remaining specifications

Heat Sinks: 20 (40)

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
LRM 20	Nose	6	12	12	12	—
Ammo (LRM) 12						
Large Laser	Nose	8	8	8	—	—
Medium Laser	RW	3	5	—	—	—
Medium Laser	LW	3	5	—	—	—
SRM 4	Aft	3	6	—	—	—
Ammo (SRM) 25						



JAGATAI

Type: Aerospace Fighter
Tech: Clan OmniFighter
Safe Thrust: 6
Max Thrust: 9
Armor: 76/50/46

Mass: 70 tons
Fuel: 4 tons (320 points)
Heat Sinks: 15 (30)
SI: 7

Primary Configuration

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
LRM 20	Nose	6	12	12	12	—
Ammo (LRM) 12						
ER PPC	RW	15	15	15	15	—
Large Pulse Laser	RW	10	10	10	10	—
ER PPC	LW	15	15	15	15	—
Large Pulse Laser	LW	10	10	10	10	—
Large Pulse Laser	Aft	10	10	10	10	—
+2 Double Heat Sinks						

Alternate Configuration A

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Ultra AC/20	Nose	14	30	30	—	—
Ammo (Ultra) 20						
ER PPC	Nose	15	15	15	15	—
Streak SRM 6	RW	4	12	12	—	—
Ammo (Streak) 15						
Streak SRM 6	LW	4	12	12	—	—
Ammo (Streak) 15						
ER Large Laser	Aft	12	10	10	10	10
+5 Double Heat Sinks						

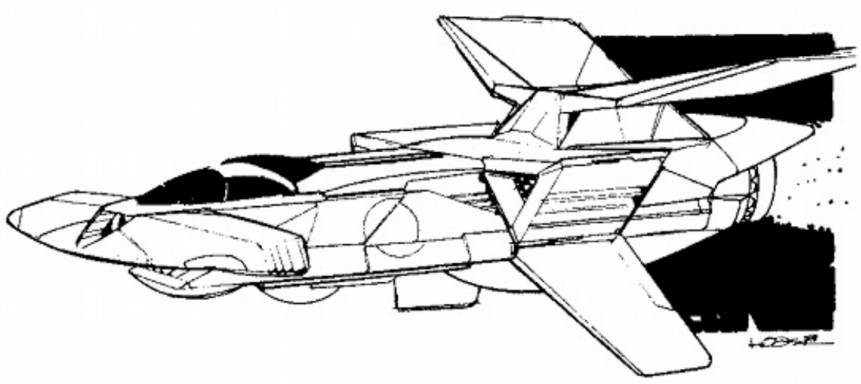
Alternate Configuration B

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 Gauss Rifles	Nose	1	15	15	15	—
Ammo (Gauss) 32						
ER Large Laser	RW	12	10	10	10	10
ER Large Laser	LW	12	10	10	10	10
Med Pulse Laser	Aft	4	7	7	—	—
ER Medium Laser	Aft	5	7	7	—	—

Alternate Configuration C

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
LB 20-X AC	Nose	6	12	12	—	—
Ammo (LB-X) 10						
2 ER Large Lasers	Nose	12	10	10	10	10
LRM 10	RW	4	6	6	6	—
Ammo (LRM) 12						
LRM 10	LW	4	6	6	6	—
Ammo (LRM) 12						
Large Pulse Laser	Aft	10	10	10	10	—
ER Large Laser	Aft	12	10	10	10	10

HEAVY AEROSPACE FIGHTERS



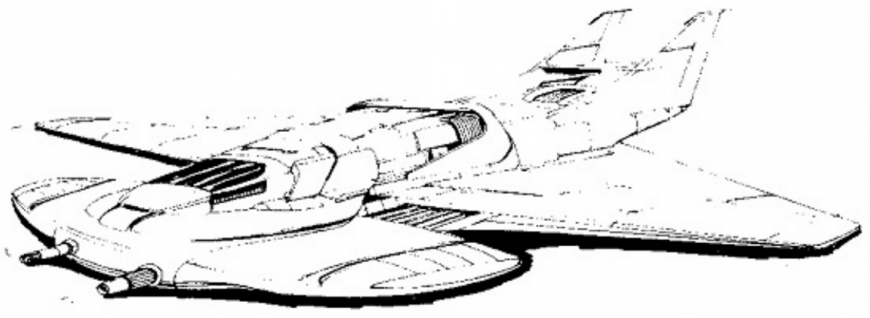
EAGLE

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 6
Max Thrust: 9
Armor: 91/52/40

Mass: 75 tons
Fuel: 5 tons (400 points)
Heat Sinks: 25
SI: 7

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Large Laser	Nose	8	8	8	—	—
Medium Laser	Nose	3	5	—	—	—
Large Laser	RW	8	8	8	—	—
Medium Laser	RW	3	5	—	—	—
Large Laser	LW	8	8	8	—	—
Medium Laser	LW	3	5	—	—	—
Medium Laser	Aft	3	5	—	—	—

FIGHTER GAME STATISTICS

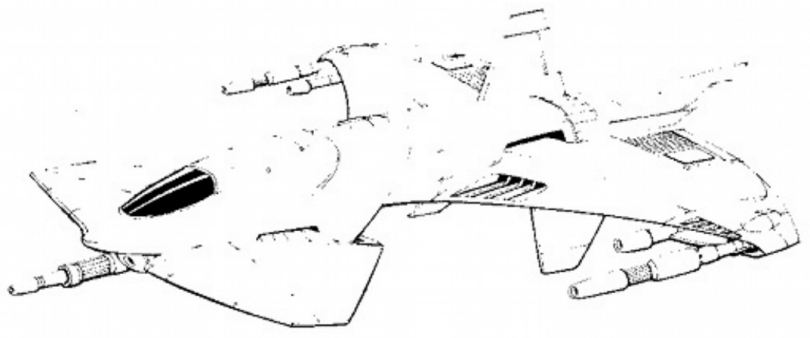


HMR-HD HAMMERHEAD

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 7
Max Thrust: 11
Armor: 86/50/30

Mass: 75 tons
Fuel: 5 tons (400 points)
Heat Sinks: 10
SI: 8

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
AC/20	Nose	7	20	—	—	—
Ammo (AC) 15						



SABUTAI

Type: Aerospace Fighter
Tech: Clan OmniFighter
Safe Thrust: 6
Max Thrust: 9
Armor: 72/45/40

Mass: 75 tons
Fuel: 3 tons (240 points)
Heat Sinks: 15 (30)
SI: 7

Primary Configuration

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Gauss Rifle	Nose	1	15	15	15	—
Ammo (Gauss) 8						
ER Small Laser	Nose	2	5	—	—	—
ER PPC	RW	15	15	15	15	—
Large Pulse Laser	RW	10	10	10	10	—
ER PPC	LW	15	15	15	15	—
Large Pulse Laser	LW	10	10	10	10	—
2 ER Small Lasers	Aft	2	5	—	—	—
+6 Double Heat Sinks						

Alternate Configuration A

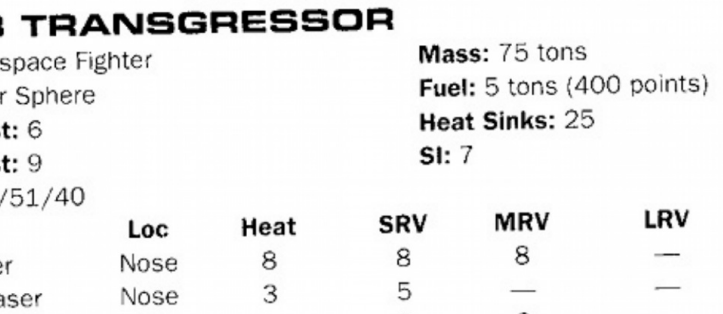
Weapons	Loc	Heat	SRV	MRV	LRV	ERV
LB 20-X AC	Nose	6	12	12	—	—
Ammo (LB-X) 15						
ER Small Laser	Nose	2	5	—	—	—
Ultra AC/20	RW	14	30	30	—	—
Ammo (Ultra) 5						
ER Small Laser	RW	2	5	—	—	—
Ultra AC/20	LW	14	30	30	—	—
Ammo (Ultra) 5						
ER Small Laser	LW	2	5	—	—	—
2 ER Medium Lasers	Aft	5	7	7	—	—

Alternate Configuration B

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
TAG	Nose	—	—	—	—	—
Narc Missile Beacon	Nose	0	—	—	—	—
Ammo (Narc) 12						
LRM 20	Nose	6	12	12	12	—
Ammo (LRM) 6						
Large Pulse Laser	Nose	10	10	10	10	—
2 LRM 20	RW	6	12	12	12	—
Ammo (LRM) 12						
2 LRM 20	LW	6	12	12	12	—
Ammo (LRM) 12						
Med Pulse Laser	Aft	4	7	7	—	—
ECM Suite	Aft	—	—	—	—	—

Alternate Configuration C

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
4 ER Large Lasers	Nose	12	10	10	10	10
ER Small Laser	Nose	2	5	—	—	—
3 ER Medium Lasers	RW	5	7	7	—	—
3 ER Medium Lasers	LW	5	7	7	—	—



TR-13 TRANSGRESSOR

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 6
Max Thrust: 9
Armor: 92/51/40

Mass: 75 tons
Fuel: 5 tons (400 points)
Heat Sinks: 25
SI: 7

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Large Laser	Nose	8	8	8	—	—
Medium Laser	Nose	3	5	—	—	—
Large Laser	RW	8	8	8	—	—
Medium Laser	RW	3	5	—	—	—
Large Laser	LW	8	8	8	—	—
Medium Laser	LW	3	5	—	—	—
Medium Laser	Aft	3	5	—	—	—

TR-13A TRANSGRESSOR

See TR-13 for remaining specifications
Heat Sinks: 25 (50)

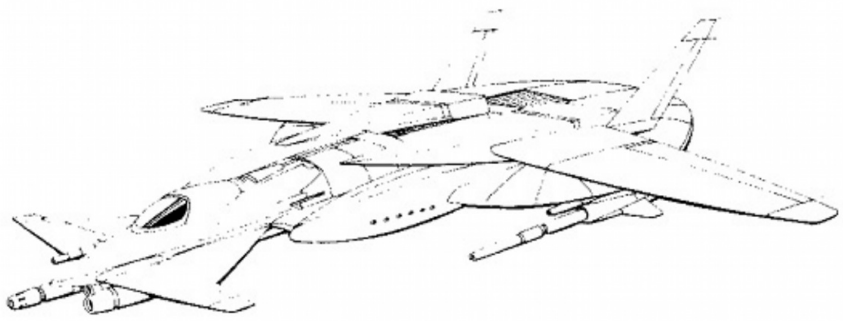
Weapons	Loc	Heat	SRV	MRV	LRV	ERV
ER Large Laser	Nose	12	8	8	8	—
Medium Laser	Nose	3	5	—	—	—
ER Large Laser	RW	12	8	8	8	—
Medium Laser	RW	3	5	—	—	—
ER Large Laser	LW	12	8	8	8	—
Medium Laser	LW	3	5	—	—	—
Medium Laser	Aft	3	5	—	—	—

TR-14 TRANSGRESSOR AC

See TR-13 for remaining specifications
Armor: 81/50/39

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
AC/20	Nose	7	20	—	—	—
Ammo (AC) 10						
Medium Laser	Nose	3	5	—	—	—
Medium Laser	RW	3	5	—	—	—
Medium Laser	LW	3	5	—	—	—
Medium Laser	Aft	3	5	—	—	—

FIGHTER GAME STATISTICS



JENGIZ

Type: Aerospace Fighter
Tech: Clan OmniFighter
Safe Thrust: 5
Max Thrust: 8
Armor: 97/63/48

Mass: 80 tons
Fuel: 4 tons (320 points)
Heat Sinks: 20 (40)
SI: 8

Primary Configuration

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
LB 10-X AC	Nose	2	6	6	—	—
Ammo (LB-X) 10						
ER PPC	Nose	15	15	15	15	—
Med Pulse Laser	Nose	4	7	7	—	—
ER Small Laser	Nose	2	5	—	—	—
Large Pulse Laser	RW	10	10	10	10	—
Med Pulse Laser	RW	4	7	7	—	—
SRM 6	RW	4	8	—	—	—
Ammo (SRM) 15						
Large Pulse Laser	LW	10	10	10	10	—
Med Pulse Laser	LW	4	7	7	—	—
SRM 6	LW	4	8	—	—	—
Ammo (SRM) 15						
Med Pulse Laser	Aft	4	7	7	—	—
ECM Suite	Aft	—	—	—	—	—

Alternate Configuration A

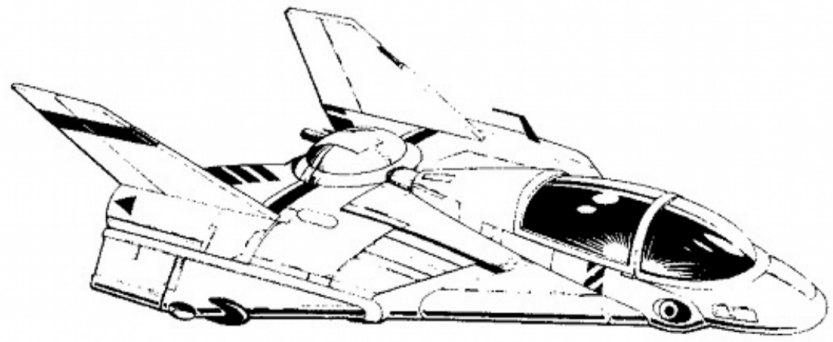
Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 ER PPC	Nose	15	15	15	15	—
2 Lg Pulse Lasers	RW	10	10	10	10	—
2 Lg Pulse Lasers	LW	10	10	10	10	—
ER Small Laser	Aft	2	5	—	—	—
+7 Double Heat Sinks						

Alternate Configuration B

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Gauss Rifle	Nose	1	15	15	15	—
Ammo (Gauss) 24						
2 ER Medium Lasers	Nose	5	7	7	—	—
ER PPC	RW	15	15	15	15	—
LRM 20+Artemis	RW	6	16	16	16	—
Ammo (LRM) 6						
ER PPC	LW	15	15	15	15	—
LRM 20+Artemis	LW	6	16	16	16	—
Ammo (LRM) 6						
ER Small Laser	Aft	2	5	—	—	—

Alternate Configuration C

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
3 Streak SRM 6	Nose	4	12	12	—	—
Ammo (Streak) 45						
LB 20-X AC	RW	6	12	12	—	—
Ammo (LB-X) 10						
LB 20-X AC	LW	6	12	12	—	—
Ammo (LB-X) 10						
Streak SRM 4	Aft	3	8	8	—	—
Ammo (Streak) 25						
ER Small Laser	Aft	2	5	—	—	—



SL-15 SLAYER

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 6
Max Thrust: 9
Armor: 94/50/48

Mass: 80 tons
Fuel: 10 tons (800 points)
Heat Sinks: 20
SI: 8

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
AC/10	Nose	3	10	10	—	—
Ammo (AC) 20						
Medium Laser	Nose	3	5	—	—	—
2 Medium Lasers	RW	3	5	—	—	—
2 Medium Lasers	LW	3	5	—	—	—
Medium Laser	Aft	3	5	—	—	—

SL-15A SLAYER

See SL-15 for remaining specifications

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
LRM 15	Nose	5	9	9	9	—
Ammo (LRM) 16						
SRM 6	Nose	4	8	—	—	—
Ammo (SRM) 30						
Medium Laser	Nose	3	5	—	—	—
2 Medium Lasers	RW	3	5	—	—	—
2 Medium Lasers	LW	3	5	—	—	—
Medium Laser	Aft	3	5	—	—	—

SL-15B SLAYER

See SL-15 for remaining specifications

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
LRM 15	Nose	5	9	9	9	—
Ammo (LRM) 16						
Medium Laser	Nose	3	5	—	—	—
2 Medium Lasers	RW	3	5	—	—	—
2 Medium Lasers	LW	3	5	—	—	—
Medium Laser	Aft	3	5	—	—	—
SRM 6	Aft	4	8	—	—	—
Ammo (SRM) 30						

SL-15C SLAYER

See SL-15 for remaining specifications

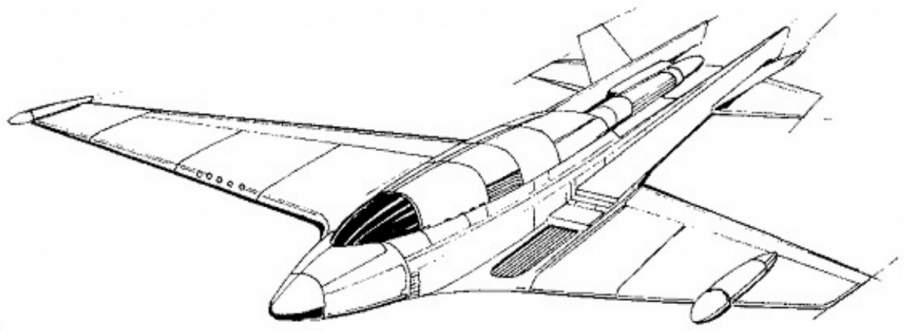
Weapons	Loc	Heat	SRV	MRV	LRV	ERV
SRM 6	Nose	4	8	—	—	—
Ammo (SRM) 30						
Medium Laser	Nose	3	5	—	—	—
2 Medium Lasers	RW	3	5	—	—	—
2 Medium Lasers	LW	3	5	—	—	—
Medium Laser	Aft	3	5	—	—	—
LRM 15	Aft	5	9	9	9	—
Ammo (LRM) 16						

SL-15R SLAYER

See SL-15 for remaining specifications

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
LB 10-X AC	Nose	2	6	6	—	—
Ammo (LB-X) 30						
Medium Laser	Nose	3	5	—	—	—
2 Medium Lasers	RW	3	5	—	—	—
2 Medium Lasers	LW	3	5	—	—	—
Medium Laser	Aft	3	5	—	—	—

FIGHTER GAME STATISTICS

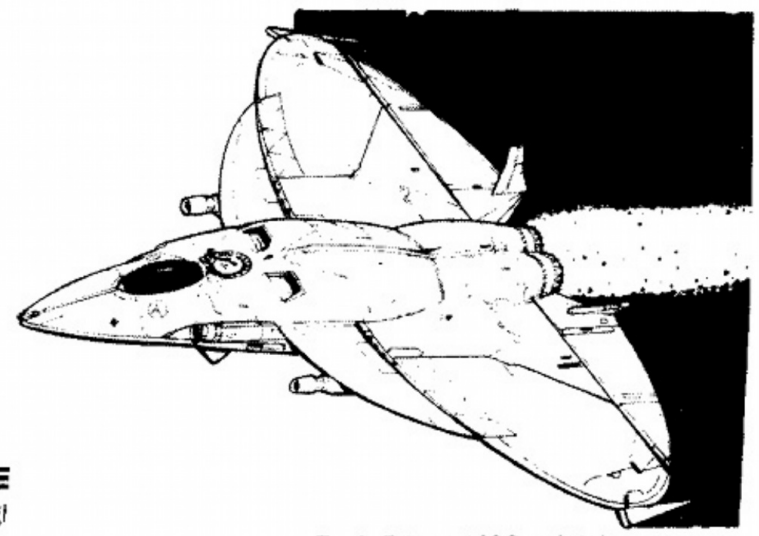


RPR-100 RAPIER

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 6
Max Thrust: 9
Armor: 73/40/49

Mass: 85 tons
Fuel: 5 tons (400 points)
Heat Sinks: 12 (24)
SI: 9

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
AC/20	Nose	7	20	—	—	—
Ammo (AC) 10						
2 PPC	Nose	10	10	10	—	—
LRM 10	Nose	4	6	6	6	—
Ammo (LRM) 12						

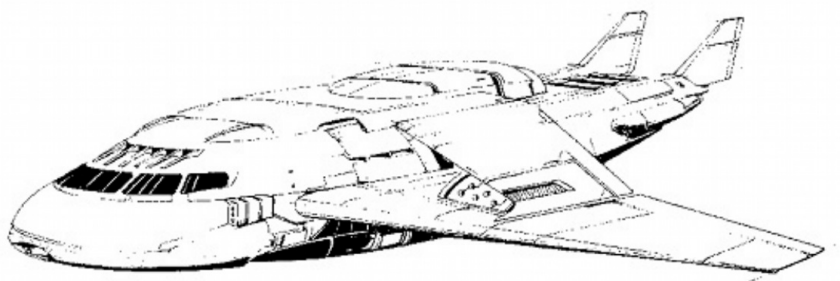


EST-R3 EIS

Type: Aerospace Figl
Tech: Inner Sphere
Safe Thrust: 6
Max Thrust: 9
Armor: 110/85/69

Fuel: 5 tons (400 points)
Heat Sinks: 11 (22)
SI: 9

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 Medium Lasers	Nose	3	5	—	—	—
2 Gauss Rifles	Nose	1	15	15	15	—
Ammo (Gauss) 32						
Large Laser	RW	8	8	8	—	—
Large Laser	LW	8	8	8	—	—



AHB-443 AHAB

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 5
Max Thrust: 8
Armor: 94/59/46

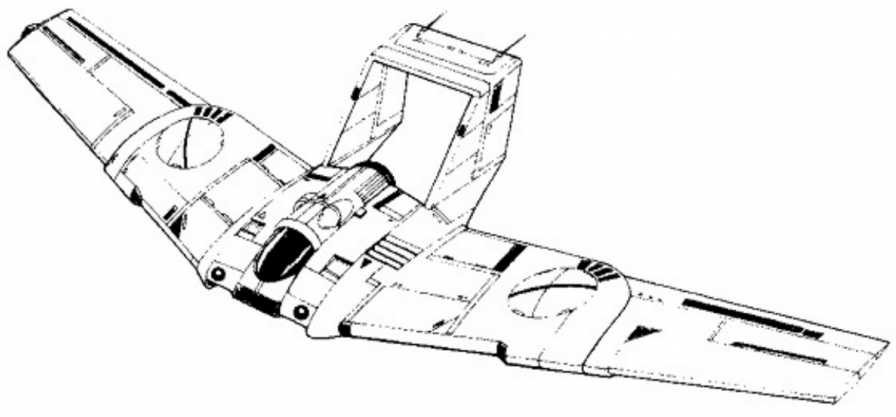
Mass: 90 tons
Fuel: 5 tons (400 points)
Heat Sinks: 14
SI: 9

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Large Laser	Nose	8	8	8	—	—
Narc Missile Beacon	Nose	0	—	—	—	—
Ammo (Narc) 24						
LRM 20	RW	6	12	12	12	—
Ammo (LRM) 18						
SRM 6	RW	4	8	—	—	—
Ammo (SRM) 15						
LRM 20	LW	6	12	12	12	—
Ammo (LRM) 18						
SRM 6	LW	4	8	—	—	—
Ammo (SRM) 15						
2 Medium Lasers	Rear	3	5	—	—	—

AHB-X AHAB

See AHB-443 for remaining specifications
Heat Sinks: 18

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Large Laser	Nose	8	8	8	—	—
3 Medium Lasers	Nose	3	5	—	—	—
LRM 20	RW	6	12	12	12	—
Ammo (LRM) 18						
SRM 6	RW	4	8	—	—	—
Ammo (SRM) 15						
LRM 20	LW	6	12	12	12	—
Ammo (LRM) 18						
SRM 6	LW	4	8	—	—	—
Ammo (SRM) 15						
2 Medium Lasers	Aft	3	5	—	—	—



CHP-W5 CHIPPEWA

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 5
Max Thrust: 8
Armor: 54/24/29

Mass: 90 tons
Fuel: 5 tons (400 points)
Heat Sinks: 25
SI: 9

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 LRM 15	Nose	5	9	9	9	—
Ammo (LRM) 32						
SRM 6	Nose	4	8	—	—	—
Ammo (SRM) 15						
2 Medium Lasers	Nose	3	5	—	—	—
2 Large Lasers	RW	8	8	8	—	—
2 Large Lasers	LW	8	8	8	—	—
2 Small Lasers	Aft	1	3	—	—	—

CHP-W7 CHIPPEWA

See CHP-W5 for remaining specifications

Armor: 54/29/33 **Heat Sinks:** 25 (50)

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 LRM 15	Nose	5	9	9	9	—
Ammo (LRM) 16						
2 Medium Lasers	Nose	3	5	—	—	—
SRM 6	Nose	4	8	—	—	—
Ammo (SRM) 15						
2 Lg Pulse Lasers	RW	10	9	9	—	—
2 Lg Pulse Lasers	LW	10	9	9	—	—
2 Sm Pulse Lasers	Aft	2	3	—	—	—

CHP-W10 CHIPPEWA

See CHP-W5 for remaining specifications

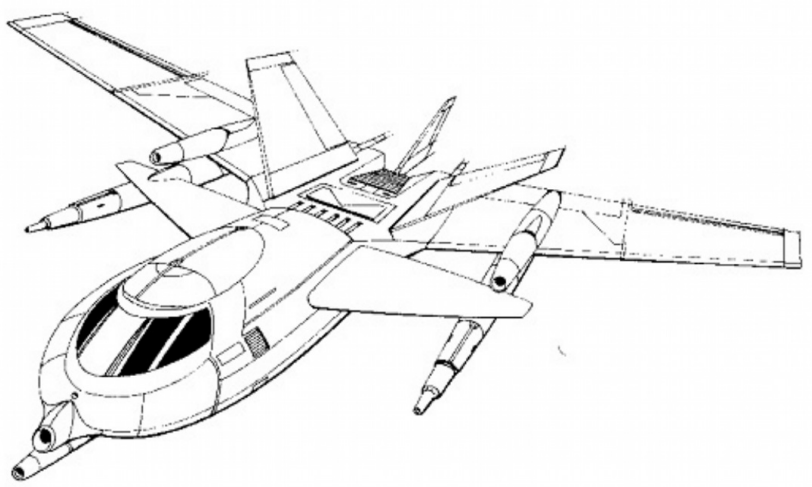
Armor: 98/58/78

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 LRM 15	Nose	5	9	9	9	—
Ammo (LRM) 32						
2 Medium Lasers	Nose	3	5	—	—	—
SRM 6	Nose	4	8	—	—	—
Ammo (SRM) 15						
Large Laser	RW	8	8	8	—	—
Large Laser	LW	8	8	8	—	—
2 Small Lasers	Aft	1	3	—	—	—

SCYTHA

Type: Aerospace Fighter
Tech: Clan OmniFighter
Safe Thrust: 6
Max Thrust: 9
Armor: 99/66/48

Mass: 90 tons
Fuel: 4 tons (320 points)
Heat Sinks: 20 (40)
SI: 9



Primary Configuration

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Ultra AC/20	Nose	14	30	30	—	—
Ammo (Ultra) 10						
ER Large Laser	Nose	12	10	10	10	10
ER Small Laser	Nose	2	5	—	—	—
2 ER Large Lasers	RW	12	10	10	10	10
2 ER Large Lasers	LW	12	10	10	10	10
2 ER Med. Lasers	Aft	5	7	7	—	—
+6 Double Heat Sinks						

Alternate Configuration A

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Narc Missile Beacon	Nose	0	—	—	—	—
Ammo (Narc) 6						
LRM 20	Nose	6	12	12	12	—
Ammo (LRM) 6						
SRM 6	Nose	4	8	—	—	—
Ammo (SRM) 15						
LRM 20	RW	6	12	12	12	—
Ammo (LRM) 6						
SRM 6	RW	4	8	—	—	—
Ammo (SRM) 15						
ER Large Laser	RW	12	10	10	10	10
LRM 20	LW	6	12	12	12	—
Ammo (LRM) 6						
SRM 6	LW	4	8	—	—	—
Ammo (SRM) 15						
ER Large Laser	LW	12	10	10	10	10
Streak SRM 6	Aft	4	12	12	—	—
Ammo (Streak) 15						
+4 Double Heat Sinks						

Alternate Configuration B

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Large Pulse Laser	Nose	10	10	10	10	—
Anti-Missile System	Nose	1	5*	—	—	—
Ammo (AMS) 24						
2 Lg Pulse Lasers	RW	10	10	10	10	—
2 Lg Pulse Lasers	LW	10	10	10	10	—
2 Med Pulse Lasers	Aft	4	7	7	—	—
Targeting Computer						

* Damage only inflicted against missiles

Alternate Configuration C

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 Med Pulse Lasers	Nose	4	7	7	—	—
Gauss Rifle	RW	1	15	15	15	—
Ammo (Gauss) 8						
ER PPC	RW	15	15	15	15	—
Gauss Rifle	LW	1	15	15	15	—
Ammo (Gauss) 8						
ER PPC	LW	15	15	15	15	—
ER Small Laser	Aft	2	5	—	—	—

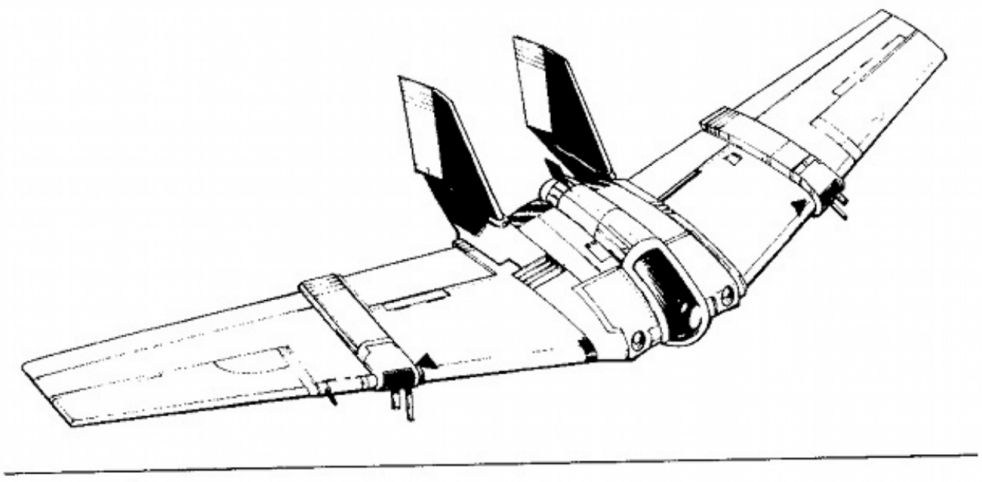
KIRGHIZ

Type: Aerospace Fighter
Tech: Clan OmniFighter
Safe Thrust: 5
Max Thrust: 8
Armor: 97/62/48

Mass: 100 tons
Fuel: 5 tons (400 points)
Heat Sinks: 20 (40)
SI: 10

Primary Configuration

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
LB 10-X AC	Nose	2	6	6	—	—
Ammo (LB-X) 20						
Gauss Rifle	RW	1	15	15	15	—
Ammo (Gauss) 12						
ER Large Laser	RW	12	10	10	10	10
Gauss Rifle	LW	1	15	15	15	—
Ammo (Gauss) 12						
ER Large Laser	LW	12	10	10	10	10
2 Streak SRM 6	Aft	4	12	12	—	—
Ammo (Streak) 30						
ER Small Laser	Aft	2	5	—	—	—



KIRGHIZ (CONTINUED)

Alternate Configuration A

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 ER PPC	Nose	15	15	15	15	—
LB 2-X AC	RW	1	1	1	1	1
Ammo (LB-X) 45						
2 Lg Pulse Lasers	RW	10	10	10	10	—
LB 2-X AC	LW	1	1	1	1	1
Ammo (LB-X) 45						
2 Lg Pulse Lasers	LW	10	10	10	10	—
ER Large Laser	Aft	12	10	10	10	10
ER Small Laser	Aft	2	5	—	—	—
+4 Double Heat Sinks						

Alternate Configuration B

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
ER PPC	Nose	15	15	15	15	—
LRM 20	Nose	6	12	12	12	—
Ammo (LRM) 6						
ER Small Laser	Nose	2	5	—	—	—
2 LRM 20	RW	6	12	12	12	—
Ammo (LRM) 16						
ER PPC	RW	15	15	15	15	—
2 LRM 20	LW	6	12	12	12	—
Ammo (LRM) 16						
ER PPC	LW	15	15	15	15	—
Med Pulse Laser	Aft	4	7	7	—	—
+6 Double Heat Sinks						

Alternate Configuration C

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Ultra AC/20	Nose	14	30	30	—	—
Ammo (Ultra) 10						
2 Lg Pulse Lasers	Nose	10	10	10	10	—
ER Small Laser	Nose	2	5	—	—	—
ER PPC	RW	15	15	15	15	—
ER PPC	LW	15	15	15	15	—
2 ER Large Lasers	Aft	12	10	10	10	10
Cargo (10 Tons)						

F-100 RIEVER

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 5
Max Thrust: 8
Armor: 96/61/48

Mass: 100 tons
Fuel: 5 tons (400 points)
Heat Sinks: 28
SI: 10

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
AC/20	Nose	7	20	—	—	—
Ammo (AC) 10						
LRM 10	Nose	4	6	6	6	—
Ammo (LRM) 24						
2 SRM 6	RW	4	8	—	—	—
Ammo (SRM) 30						
2 SRM 6	LW	4	8	—	—	—
Ammo (SRM) 30						

F-100A RIEVER

See F-100 for remaining specifications

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
AC/20	Nose	7	20	—	—	—
Ammo (AC) 10						
2 SRM 6	Nose	4	8	—	—	—
Ammo (SRM) 15						
2 SRM 6	RW	4	8	—	—	—
Ammo (SRM) 30						
2 SRM 6	LW	4	8	—	—	—
Ammo (SRM) 30						

F-100B RIEVER

See F-100 for remaining specifications
Armor: 76/57/44

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
AC/20	Nose	7	20	—	—	—
Ammo (AC) 10						
LRM 10	Nose	4	6	6	6	—
Ammo (LRM) 24						
AC/5	RW	1	5	5	—	—
Ammo (AC) 20						
AC/5	LW	1	5	5	—	—
Ammo (AC) 20						

F-700 RIEVER

See F-100 for remaining specifications
Safe Thrust: 6
Max Thrust: 9

Heat Sinks: 20 (40)
Armor: 91/60/47

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
AC/20	Nose	7	20	—	—	—
Ammo (AC) 15						
LRM 10	Nose	4	6	6	6	—
Ammo (LRM) 24						
SRM 6	RW	4	8	—	—	—
Ammo (SRM) 30						
SRM 6	LW	4	8	—	—	—
Ammo (SRM) 30						

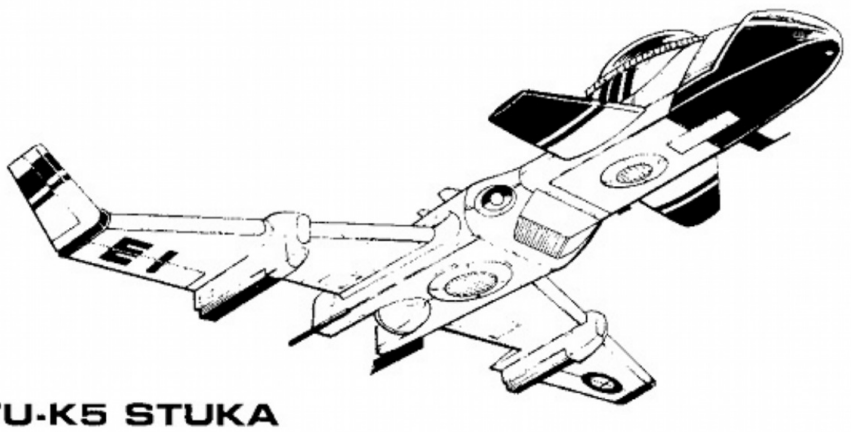
F-700A RIEVER

See F-100 for remaining specifications
Armor: 96/61/56

Heat Sinks: 20 (40)

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 LB 10-X AC	Nose	2	6	6	—	—
Ammo (LB-X) 40						
2 SRM 6	Nose	4	8	—	—	—
Ammo (SRM) 30						
3 SRM 6	RW	4	8	—	—	—
Ammo (SRM) 30						
3 SRM 6	LW	4	8	—	—	—
Ammo (SRM) 30						

FIGHTER GAME STATISTICS



STU-K5 STUKA

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 5
Max Thrust: 8
Armor: 94/54/48
Mass: 100 tons
Fuel: 5 tons (400 points)
Heat Sinks: 30
SI: 10

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Medium Laser	Nose	3	5	—	—	—
LRM 20	Nose	6	12	12	12	—
Ammo (LRM) 12						
SRM 4	Nose	3	6	—	—	—
Ammo (SRM) 25						
2 Large Lasers	RW	8	8	8	—	—
2 Large Lasers	LW	8	8	8	—	—
2 Medium Lasers	Aft	3	5	—	—	—

STU-D6 STUKA

See STU-K5 for remaining specifications
Armor: 94/54/56
Heat Sinks: 20 (40)

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
2 SRM 6	Nose	4	8	—	—	—
Ammo (SRM) 60						
Medium Laser	Nose	3	5	—	—	—
2 Large Lasers	RW	8	8	8	—	—
LRM 20	RW	6	12	12	12	—
Ammo (LRM) 12						
2 Large Lasers	LW	8	8	8	—	—
LRM 20	LW	6	12	12	12	—
Ammo (LRM) 12						
2 Medium Lasers	Aft	3	5	—	—	—

STU-K10 STUKA

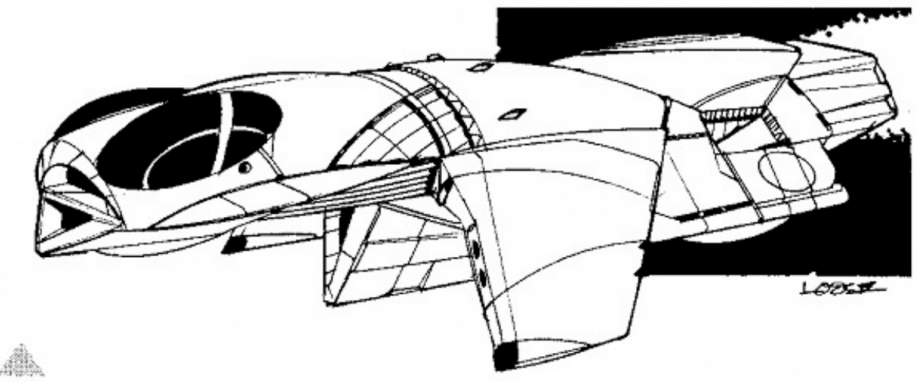
See STU-K5 for remaining specifications
Heat Sinks: 32

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
LRM 20	Nose	6	12	12	12	—
Ammo (LRM) 30						
4 Small Lasers	Nose	1	3	—	—	—
2 Large Lasers	RW	8	8	8	—	—
2 Large Lasers	LW	8	8	8	—	—
2 Medium Lasers	Aft	3	5	—	—	—

STU-K15 STUKA

See STU-K5 for remaining specifications
Armor: 69/45/43

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Medium Laser	Nose	3	5	—	—	—
6 Small Lasers	Nose	1	3	—	—	—
LRM 20	Nose	6	12	12	12	—
Ammo (LRM) 18						
SRM 4	Nose	3	6	—	—	—
Ammo (SRM) 50						
2 Large Lasers	RW	8	8	8	—	—
2 Large Lasers	LW	8	8	8	—	—
2 Medium Lasers	Aft	3	5	—	—	—



THUNDERBIRD

Type: Aerospace Fighter
Tech: Inner Sphere
Safe Thrust: 5
Max Thrust: 8
Armor: 91/52/40
Mass: 100 tons
Fuel: 5 tons (400 points)
Heat Sinks: 25
SI: 10

Weapons	Loc	Heat	SRV	MRV	LRV	ERV
Large Laser	Nose	8	8	8	—	—
Medium Laser	Nose	3	5	—	—	—
Large Laser	RW	8	8	8	—	—
Medium Laser	RW	3	5	—	—	—
LRM 20	RW	6	12	12	12	—
Ammo (LRM) 12						
Large Laser	LW	8	8	8	—	—
Medium Laser	LW	3	5	—	—	—
LRM 20	LW	6	12	12	12	—
Ammo (LRM) 12						
2 Medium Lasers	Aft	3	5	—	—	—

WEAPON AND EQUIPMENT TABLES

INNER SPHERE STANDARD WEAPONS

Type	Class	Heat	Attack Value	Max. Range	Tons	Ammo Per Ton
Energy Weapons						
ER Laser (Large)	Laser	12	8	Long	5	—
ER Laser (Medium)	Laser	5	5	Medium	1	—
ER Laser (Small)	Laser	2	3	Short	0.5	—
Flamer	Point Defense	3	2	Short	1	—
Large Laser	Laser	8	8	Medium	5	—
Medium Laser	Laser	3	5	Short	1	—
Small Laser	Point Defense	1	3	Short	0.5	—
PPC	PPC	10	10	Medium	7	—
ER PPC	PPC	15	10	Long	7	—
Pulse Laser (Large)	Pulse Laser	10	9	Medium	7	—
Pulse Laser (Medium)	Pulse Laser	4	6	Short	2	—
Pulse Laser (Small)	Point Defense	2	3	Short	1	—
Ballistic Weapons						
Anti-Missile System	AMS	1	3**	—	0.5	12
Autocannon/2	Autocannon	1	2	Long	6	45
Autocannon/5	Autocannon	1	5	Medium	8	20
Autocannon/10	Autocannon	3	10	Medium	12	10
Autocannon/20	Autocannon	7	20	Short	14	5
Gauss Rifle	Autocannon	1	15	Long	15	8
Light Gauss Rifle	Autocannon	1	8	Extreme	12	16
LB 2-X AC	LB-X AC	1	2	Extreme	6	45
LB 5-X AC	LB-X AC	1	3	Long	8	20
LB 10-X AC	LB-X AC	2	6	Medium	11	10
LB 20-X AC	LB-X AC	6	12	Medium	14	5
Machine Gun	Point Defense	0	2	Short	0.5	200
Ultra AC/2	Autocannon	2	3	Extreme	7	45
Ultra AC/5	Autocannon	2	7	Long	9	20
Ultra AC/10	Autocannon	8	15	Long	13	10
Ultra AC/20	Autocannon	16	30	Medium	15	5
Missile Weapons						
LRM 5	LRM	2	3	Long	2	24
LRM 10	LRM	4	6	Long	5	12
LRM 15	LRM	5	9	Long	7	8
LRM 20	LRM	6	12	Long	10	6
LRM 5+Artemis	LRM	2	4	Long	3	24
LRM 10+Artemis	LRM	4	8	Long	6	12
LRM 15+Artemis	LRM	5	12	Long	8	8
LRM 20+Artemis	LRM	6	16	Long	11	6
MRM 10	MRM	4	6	Medium	3	24
MRM 20	MRM	6	12	Medium	7	12
MRM 30	MRM	10	18	Medium	10	8
MRM 40	MRM	12	24	Medium	12	6
Narc Missilé Beacon	*	0	—	Short	3	6
Improved Narc Launcher	*	0	—	Medium	5	3
SRM 2	SRM	2	2	Short	1	50
SRM 4	SRM	3	6	Short	2	25
SRM 6	SRM	4	8	Short	3	15
SRM 2+Artemis	SRM	2	4	Short	2	50

INNER SPHERE STANDARD WEAPONS (CONTINUED)

Type	Class	Heat	Attack Value	Max. Range	Tons	Ammo Per Ton
SRM 4+Artemis	SRM	3	12	Short	3	25
SRM 6+Artemis	SRM	4	1	Short	4	15
Streak SRM 2	SRM	2	4	Short	1.5	50
Streak SRM 4	SRM	3	8	Short	3	25
Streak SRM 6	SRM	4	12	Short	4.5	15

* Narc launchers only work against ground-based *BattleTech* units, and only those units can benefit from the Narc homing signals (see p. 133, *BMR*).

** Only against missiles.

CLAN STANDARD WEAPONS

Type	Class	Heat	Attack Value	Max. Range	Tons	Ammo Per Ton
Energy Weapons						
ER Laser (Large)	Laser	12	10	Extreme	4	—
ER Laser (Medium)	Laser	5	7	Medium	1	—
ER Laser (Small)	Laser	2	5	Short	0.5	—
Heavy Laser (Large)	Laser	18	16	Long	4	—
Heavy Laser (Medium)	Laser	7	10	Medium	1	—
Heavy Laser (Small)	Laser	3	6	Short	0.5	—
Flamer	Point Defense	2	2	Short	0.5	—
ER PPC	PPC	15	15	Long	6	—
Pulse Laser (Large)	Pulse Laser	10	10	Long	6	—
Pulse Laser (Medium)	Pulse Laser	4	7	Medium	2	—
Pulse Laser (Small)	Pulse Laser	2	3	Short	1	—
Ballistic Weapons						
Anti-Missile System	AMS	1	5†	—	0.5	24
Gauss Rifle	Autocannon	1	15	Long	12	8
LB 2-X AC	LB-X AC	1	1	Extreme	5	45
LB 5-X AC	LB-X AC	1	3	Long	7	20
LB 10-X AC	LB-X AC	2	6	Medium	10	10
LB 20-X AC	LB-X AC	6	12	Medium	12	5
Machine Gun	Point Defense	0	2	Short	0.25	200
Ultra AC/2	Autocannon	2	3	Extreme	5	45
Ultra AC/5	Autocannon	2	7	Long	7	20
Ultra AC/10	Autocannon	6	15	Medium	10	10
Ultra AC/20	Autocannon	14	30	Medium	12	5
Missile Weapons						
ATM 3	ATM	2	4*	Medium*	1.5	20
ATM 6	ATM	4	8*	Medium*	3.5	10
ATM 9	ATM	6	14*	Medium*	5	7
ATM 12	ATM	8	20*	Medium*	7	5
LRM 5	LRM	2	3	Long	1	24
LRM 10	LRM	4	6	Long	2.5	12
LRM 15	LRM	5	9	Long	3.5	8
LRM 20	LRM	6	12	Long	5	6
LRM 5+Artemis	LRM	2	4	Long	2	24
LRM 10+Artemis	LRM	4	8	Long	3.5	12
LRM 15+Artemis	LRM	5	12	Long	4.5	8
LRM 20+Artemis	LRM	6	16	Long	6	6
Narc Missile Beacon	**	0	—	—	2	6
SRM 2	SRM	2	2	Short	0.5	50

CLAN STANDARD WEAPONS (CONTINUED)

Type	Class	Heat	Attack Value	Max. Range	Tons	Ammo Per Ton
SRM 4	SRM	3	6	Short	1	25
SRM 6	SRM	4	8	Short	1.5	15
SRM 2+Artemis	SRM	2	4	Short	1.5	50
SRM 4+Artemis	SRM	3	6	Short	2	25
SRM 6+Artemis	SRM	4	10	Short	2.5	15
Streak SRM 2	SRM	2	4	Medium	1	50
Streak SRM 4	SRM	3	8	Medium	2	25
Streak SRM 6	SRM	4	12	Medium	3	15

* This value reflects the ATMs using standard missiles. If playing a game using fighter-only units (no units dividing their weapons into bays), the players can assign extended-range or high-explosive ammo in full-ton lots. When using ER ammo, increase the range bracket to extreme and halve the Attack Value (round up). If using HE ammo, reduce the range bracket to short and multiply the Attack Value by 1.5 (round up).
** Narc launchers only work against ground-based *BattleTech* units, and only those units can benefit from the Narc homing signals (see p. 133, *BMR*).
† Only against missiles.

CAPITAL WEAPONS

Type	Class	Heat	Attack Values	Max. Range	Tons	Tons Per Shot
Energy Weapons						
NL35	Capital Laser	52	3.5	Long	700	—
NL45	Capital Laser	70	4.5	Extreme	900	—
NL55	Capital Laser	85	5.5	Extreme	1,100	—
Light NPPC	Capital PPC	105	7	Long	1,400	—
Medium NPPC	Capital PPC	135	9	Extreme	1,800	—
Heavy NPPC	Capital PPC	225	15	Extreme	3,000	—
Ballistic Weapons						
NAC/10	Capital AC	30	10	Long	2,000	0.2
NAC/20	Capital AC	60	20	Long	2,500	0.4
NAC/25	Capital AC	85	25	Long	3,000	0.6
NAC/30	Capital AC	100	30	Long	3,500	0.8
NAC/35	Capital AC	120	35	Medium	4,000	1
NAC/40	Capital AC	135	40	Medium	4,500	1.2
Light N-Gauss	Capital Gauss	9	15	Extreme	4,500	0.2
Medium N-Gauss	Capital Gauss	15	25	Extreme	5,500	0.4
Heavy N-Gauss	Capital Gauss	18	30	Extreme	7,000	0.5
Missile Weapons						
Killer Whale	Capital Missile	20	4	Extreme	150	50
White Shark	Capital Missile	15	3	Extreme	120	40
Barracuda	Capital Missile	10	2	Extreme	90	30
AR10*	AR10	*	*	*	250	*
Kraken-T**	Capital Missile	50	10	Extreme	220	100
Killer Whale-T**	Capital Missile	20	4	Extreme	160	50
White Shark-T**	Capital Missile	15	3	Extreme	140	40
Barracuda-T**	Capital Missile	10	2	Extreme	100	30
Screen Launcher	Screen	10	—	Short	40	10

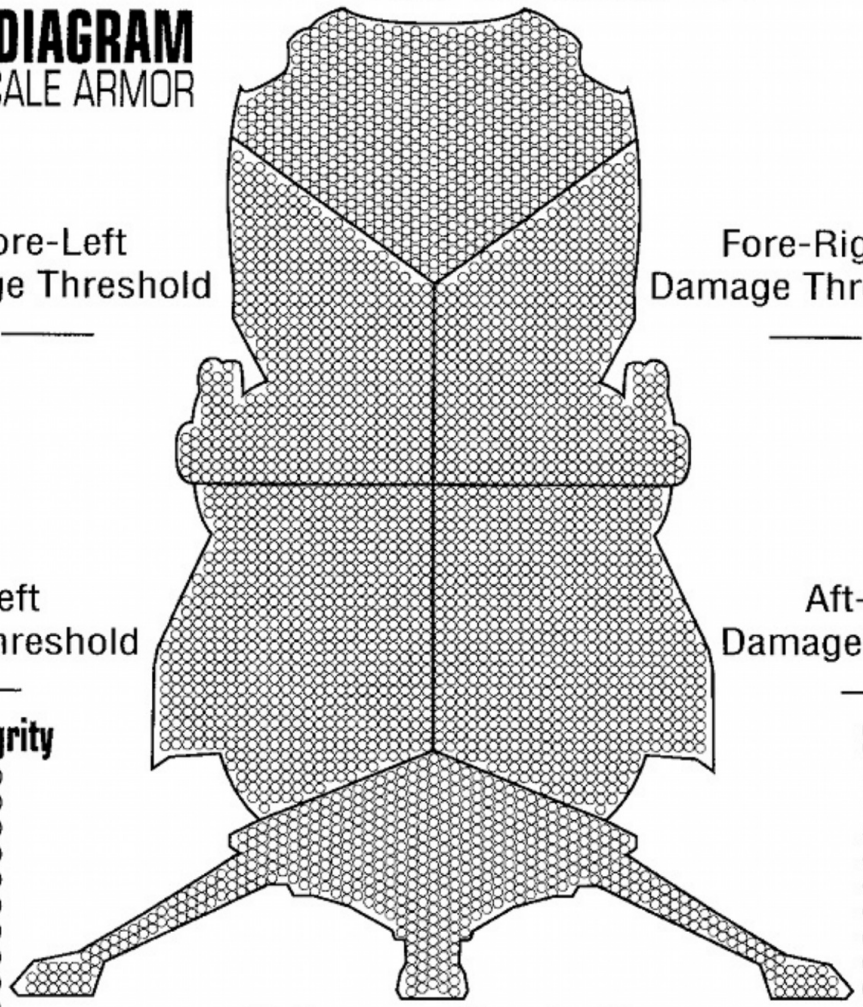
* The AR10 system can fire Killer Whale, White Shark, or Barracuda missiles (but not teleoperated missiles) as long as other appropriate ammunition is available.
** Teleoperated missiles have limited fuel (see *Teleoperated Missiles,* p. 41).

AEROTECH 2™

LARGE CRAFT RECORD SHEET

Nose Damage Threshold _____

ARMOR DIAGRAM
CAPITAL SCALE ARMOR



Fore-Left Damage Threshold _____

Fore-Right Damage Threshold _____

Aft-Left Damage Threshold _____

Aft-Right Damage Threshold _____

KF Drive Integrity

Structural Integrity

Aft Damage Threshold _____

Crew Data

Gunnery Skill: _____ Piloting Skill: _____

Hits Taken	1	2	3	4	5	6
Modifier	+1	+2	+3	+4	+5	Incap.

Vessel Data

Type: _____ Tonnage: _____
Thrust: Technology Base:
Safe Thrust: _____ ☐ Clan
Maximum Thrust: _____ ☐ Inner Sphere

Total Heat Sinks: ___ (___) Single ☐ Double ☐

Heat Generated per Arc:

Nose: _____ Fore-Left: _____
Fore-Right: _____ Left Broadside: _____
Right Broadside: _____ Aft-Left: _____
Aft-Right: _____ Aft: _____

Weapons Inventory

Bay	Location	SRV	MRV	LRV	ERV

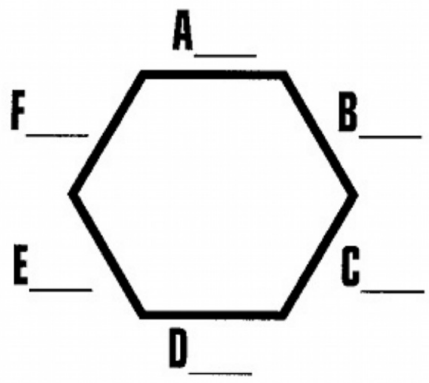
Critical Damage

Avionics	+1	+2	+5			
Cargo						
CIC	+2	+4	Dest.			
Docking Collars						
Doors						
Engine	–1	–2	–3	–4	–5	Dest.
Grav Decks						
Life Support	+2					
Sensors	+1	+2	+5			
Thrusters: Left	+1	+2	+3	Dest.		
Thrusters: Right	+1	+2	+3	Dest.		

Velocity Record

Turn#	Thrust	Velocity	Effective Velocity	Fuel
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Advanced Movement Vectors



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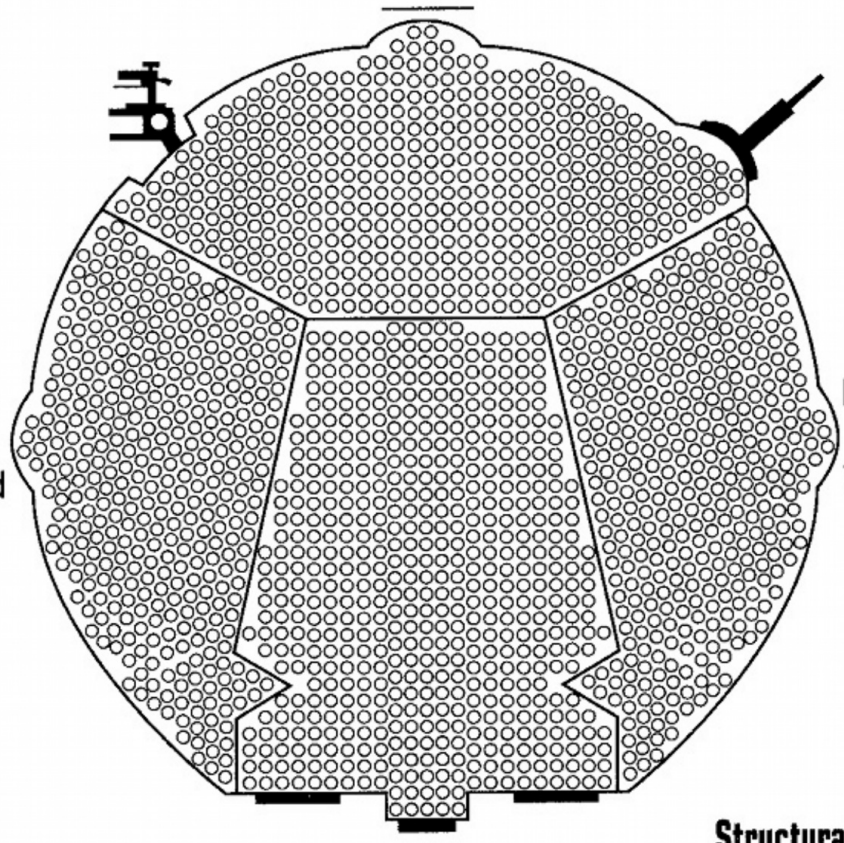
AEROTECH 2™

DROPSHIP RECORD SHEET

ARMOR DIAGRAM

Nose
Damage Threshold
_____



Left Side
Damage
Threshold
_____

Right Side
Damage
Threshold
_____

Aft
Damage Threshold
_____

Structural Integrity

○○○○○○○○○
○○○○○○○○○
○○○○○○○○○

Crew Data

Gunnery Skill: _____ Piloting Skill: _____

Hits Taken	1	2	3	4	5	6
Modifier	+1	+2	+3	+4	+5	Incap.

Vessel Data

Type: _____ Tonnage: _____
Thrust: Technology Base:
Safe Thrust: _____ ☐ Clan
Maximum Thrust: _____ ☐ Inner Sphere

Total Heat Sinks: ___ (___) Single ☐
Heat Generated per Arc: Double ☐

Nose: _____ Aft-Right: _____
Fore-Right: _____ Aft-Left: _____
Fore-Left: _____ Aft: _____

Weapons Inventory

Bay	Location	SRV	MRV	LRV	ERV

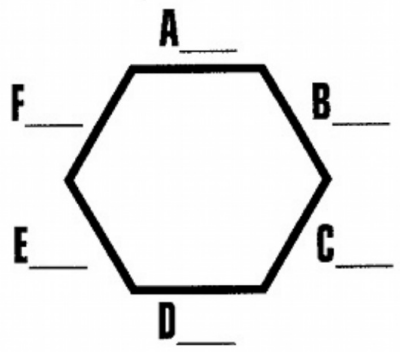
Critical Damage

Avionics	+1	+2	+5			
Cargo						
Docking Collar	Dest.					
Doors						
Engine	–1	–2	–3	–4	–5	Dest.
FCS	+2	+4	Dest.			
Gear	+5					
KF Boom	Dest.					
Life Support	+2					
Sensors	+1	+2	+5			
Thrusters: Left	+1	+2	+3	Dest.		
Thrusters: Right	+1	+2	+3	Dest.		

Velocity Record

Turn#	Thrust	Velocity	Effective Velocity	Fuel
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Advanced Movement Vectors



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AEROTECH 2™

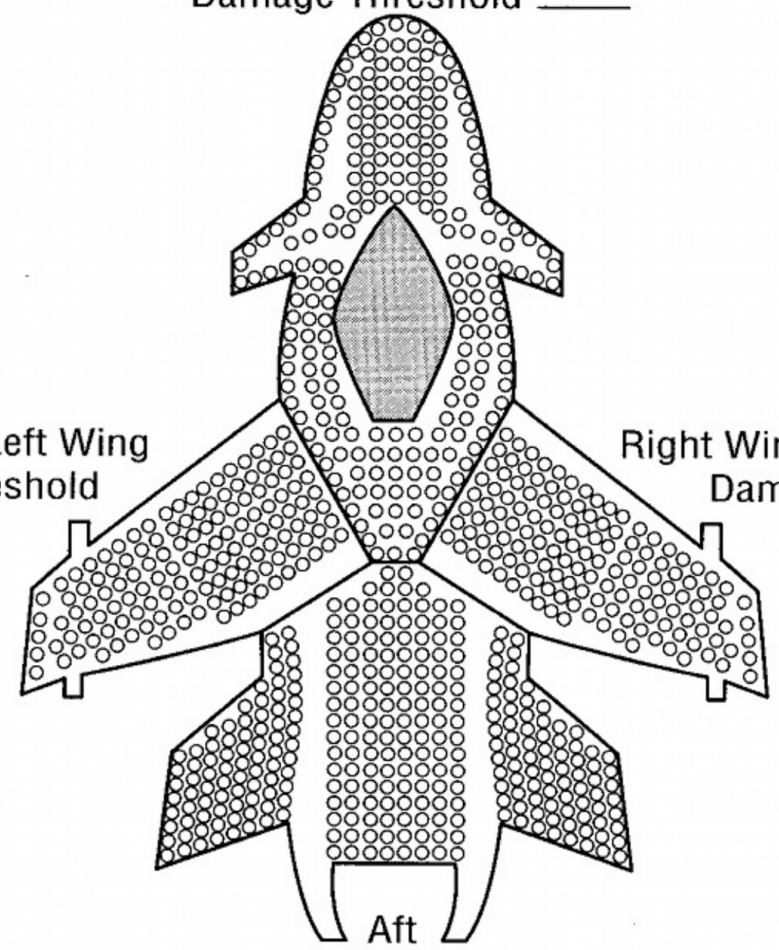
FIGHTER RECORD SHEET

ARMOR DIAGRAM

Nose
Damage Threshold ____

Left Wing
Damage Threshold
____

Right Wing
Damage Threshold
____



Aft
Damage Threshold ____

Structural Integrity

○○○○○
○○○○○

Pilot Data

Name: _____

Gunnery Skill: _____ Piloting Skill: _____

Hits Taken	1	2	3	4	5	6
Consciousness #	3	5	7	10	11	Dead
Modifier	+1	+2	+3	+4	+5	Dead

Vessel Data

Type: _____ Tonnage: _____

Thrust: Technology Base:

Safe Thrust: _____ ☐ Clan

Maximum Thrust: _____ ☐ Inner Sphere

Weapons Inventory

Type	Location	Heat	SRV	MRV	LRV	ERV

Bomb Load: _____

Total Heat Sinks: ___ (___)

○○○○○○○○○○○○○○
○○○○○○○○○○○○○○
○○○○○○○○○○○○○○

Single ☐
Double ☐

Critical Damage

Avionics	+1	+2	+5	
Cargo				
Engine	2	4	Dest.	
FCS	+2	+4	Dest.	
Gear	+5			
Life Support	+2			
Sensors	+1	+2	+5	
Thrusters: Left	+1	+2	+3	Dest.
Thrusters: Right	+1	+2	+3	Dest.

Velocity Record

Turn#	Thrust	Velocity	Effective Velocity	Fuel
1				
2				
3				
4				
5				
6				
7				
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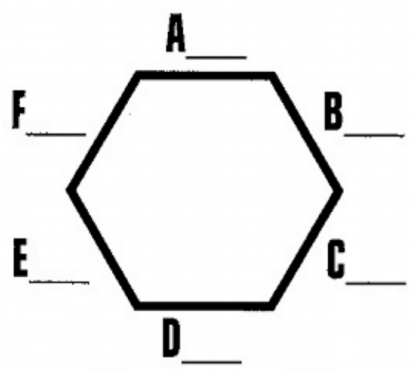
20				

Advanced Movement Vectors



Heat Scale

Heat Overflow ☐

30	Shutdown
29	
28	Ammo Explosion, avoid on 8+
27	Pilot Damage, avoid on 9+
26	Shutdown, avoid on 10+
25	Random Movement, avoid on 10+
24	+4 Modifier to Fire
23	Ammo Explosion, avoid on 6+
22	Shutdown, avoid on 8+
21	Pilot Damage, avoid on 6+
20	Random Movement, avoid on 8+
19	Ammo Explosion, avoid on 4+
18	Shutdown, avoid on 6+
17	+3 Modifier to Fire
16	
15	Random Movement, avoid on 7+
14	Shutdown, avoid on 4+
13	+2 Modifier to Fire
12	
11	
10	Random Movement, avoid on 6+
09	
08	+1 Modifier to Fire
07	
06	
05	Random Movement, avoid on 5+
04	
03	
02	
01	
00	

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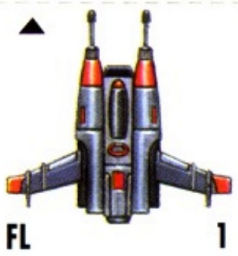
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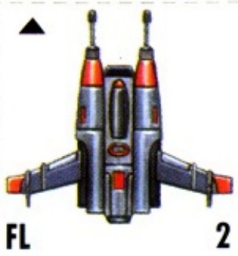
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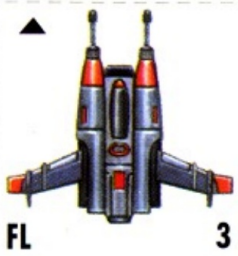
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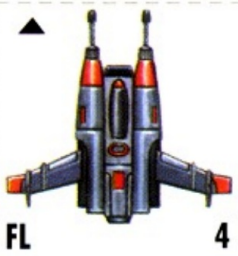
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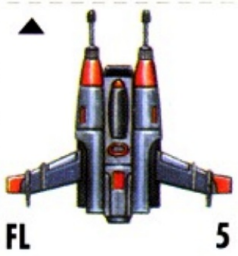
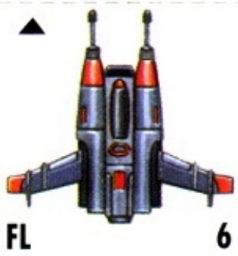

FL 5


FL 6

FM 1

FM 2

FM 3

FM 4

FM 5

FM 6

FM 7

FM 8

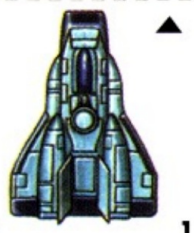
FH 1

FH 2

FH 3

FH 4

FH 5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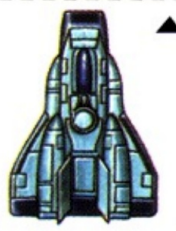
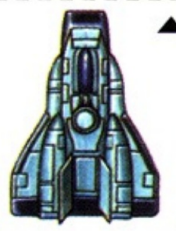

DL 2


DL 3

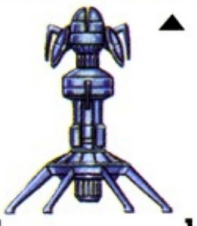
DM 1

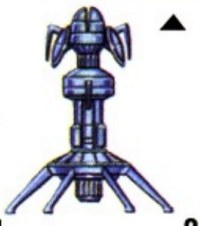
DM 2

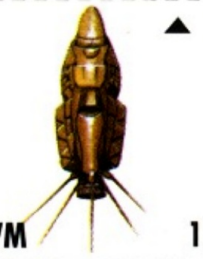
DM 3

DH 1

DA 1

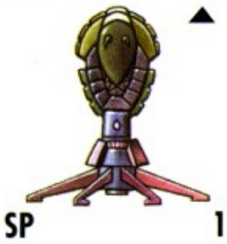

JU 1

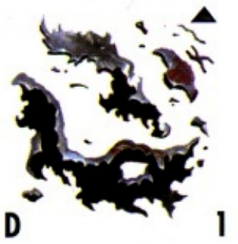

JU 2


WM 1

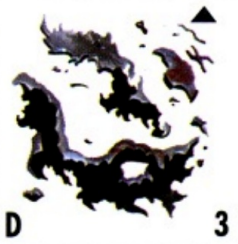
WM 2

WM 3


SP 1


D 1

D 2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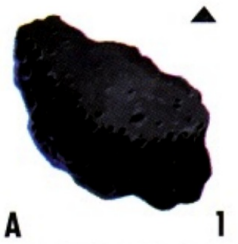
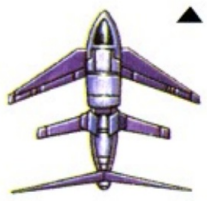
S 1

S 2


A 1

WH 1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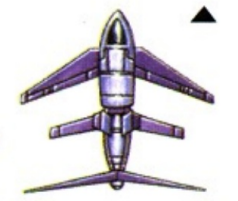
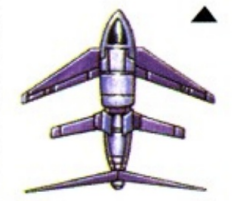
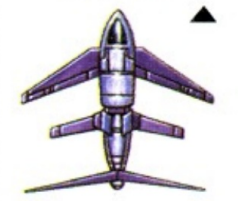
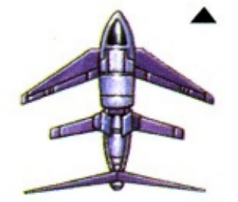

FL 8


FL 9


FL 10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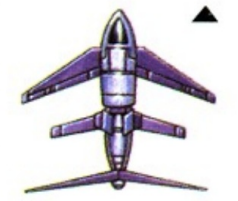
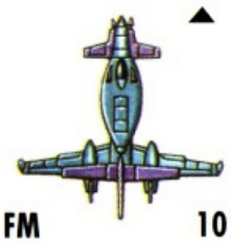
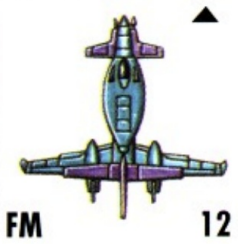

FL 12

FM 9

M 1


FM 10

FM 11


FM 12

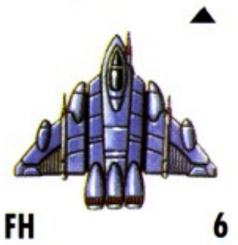
FM 13

FM 14

FM 15

FM 16

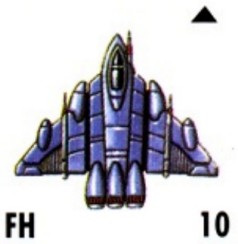
M 2


FH 6

FH 7

FH 8

FH 9


FH 10

DL 4

DL 5

M 3

DL 6

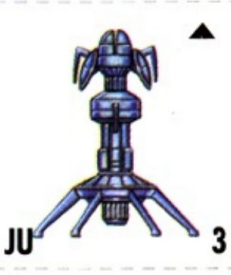
DM 4

DM 5

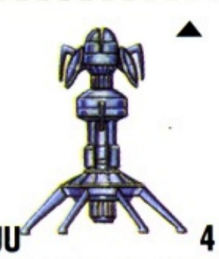
DM 6

DH 2

DA 2


JU 3

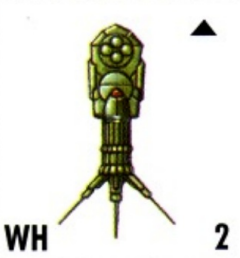
M 4

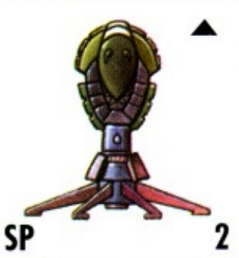

JU 4

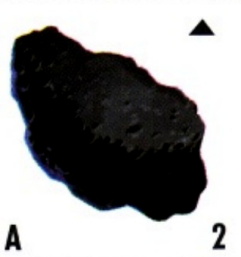
WM 4

WM 5

WM 6


WH 2


SP 2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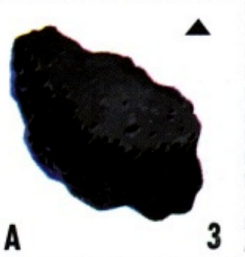
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